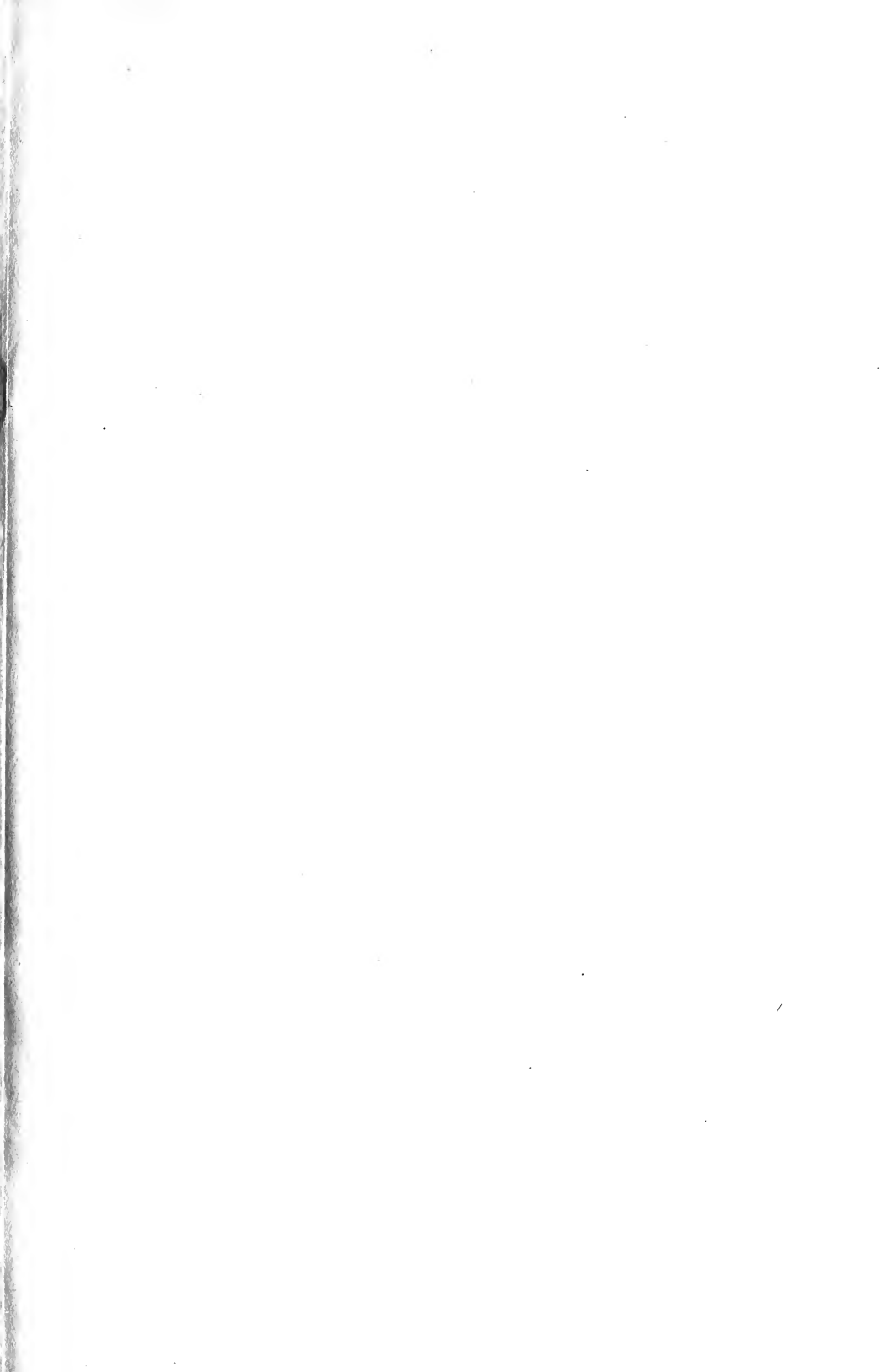


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Original Articles.

ON SOME ASPECTS OF SMALLPOX IN INFANTS
AND CHILDREN.

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SMALLPOX must be considered as the most interesting of the eruptive fevers ; since the earliest times it has been the unremitting scourge of mankind and has been regarded with the greatest dread in every country in the world. Its history, as it affects the incidence on infancy and childhood, is instructive.

Until the commencement of the nineteenth century this disease possessed a far greater degree of importance than that which attaches to it at the present time. It has always been attended with a high mortality whenever introduced into an unprotected community for the first time ; for example, in Mexico, where it was introduced by the Spaniards under Cortez in the sixteenth century, or in the West Indies in the slave importations.

In the eighteenth or nineteenth centuries in England it attained a high degree of intensity, and the mortality reached, on an average, one tenth the annual deaths of the entire population : nine tenths of the deaths occurred under five years of age and nearly all the remainder between five and ten years. Smallpox was therefore essentially a disease of childhood. This was the case, at any rate,

in the majority of the large provincial towns, such as Manchester, Chester, Warrington and Glasgow; in these there was a rapidly growing population with an excess of births, due to large numbers of new families settling, and therefore a rapid increase in the number of children; at that time the disease was as prevalent as measles or whooping-cough is at the present time. Let us examine the age-distribution of the outbreak of 1837-40, which was one of the greatest in the whole history of Great Britain and was chiefly fatal to infants and children, and take, as an example, Glasgow, 1835-39.

Smallpox deaths.	Under 1 year.	1-2 years.	2-5 years.	5-10 years.	10-20 years.	20-30 years.	30-40 years.	Above 40 years.
2196	747 (34%)	641 (25%)	545 (25%)	111 (5%)	56	74	16	6
					(7%)			

After this great epidemic legislation was carried out in 1840, on the initiative of Lord Lansdowne, to enable the people to get their children vaccinated, if desired, at the cost of the ratepayers, and to prohibit the old practice of inoculation.

In 1853 vaccination was made compulsory, whilst in 1867 the machinery for the due carrying out of the law was strengthened.

A few years later an altered incidence of smallpox on children and adults began to be apparent, because infants were better vaccinated.

The next great epidemic in England in 1870-71 emphasised this change of incidence most remarkably.

	Smallpox deaths under 5 years.	Smallpox deaths over 5 years.
1868 . . .	1234 . . .	818
1869 . . .	892 . . .	673
1870 . . .	1245 . . .	1375
1871 . . .	7770 . . .	15356
1872 . . .	5658 . . .	13336

We find, therefore, in countries where vaccination is well carried out that adults are more frequently affected. The reason that so many unvaccinated children died under five years of age of this disease is explained by the fact that in the interval after a great epidemic, material in the shape of large numbers of susceptible children will gradually accumulate, especially in districts where vaccination is not strictly enforced, and thus the numbers of unvaccinated children in some districts may gradually reach as much as 20-30 per cent. of the births. Therefore, as regards children and infants, smallpox

attacks only those who are unvaccinated or those in whom the immunity conferred by a primary vaccination is gradually waning.

One fact, then, stands out clearly—that the prevalence of the disease has been greatly checked by vaccination, but smallpox in unvaccinated children has a severity and mortality at the present day almost as deadly as in pre-vaccination times.

It will not be necessary to enter further into the question of the merits of vaccination, which have been so conclusively established.

It is interesting to examine the various peculiarities of smallpox to be found amongst infants and children who have been well vaccinated, and in those who have never been submitted to this beneficial operation.

Before doing so, it will be well to give an outline of the usual course of the disease.

ONSET OF SYMPTOMS.

After an incubation of twelve days the early symptoms of smallpox are ushered in abruptly by fever, which frequently reaches 104° and 105° F.; severe prostration with various nervous and other disturbances may be present. The vomiting and nausea, more common in children than adults, are generally severe, and may recur, especially in children, for some considerable time after the onset.

The intense headache and pains in the loins, thighs and back which are usually met with in the adult are replaced in young children by frequent drowsiness and stupor and in some cases coma; even convulsions may occur, showing that the cerebral disturbance is severe in children. The fever and other symptoms rapidly subside about the third day as the specific eruption begins to appear on the various parts of the body.

PRODROMAL RASHES.

During the initial feverish stage prodromal rashes frequently make their appearance and may be either erythematous or hæmorrhagic in character. In infants and children these pre-variolar rashes are not so often seen as in adults.

The erythematous rashes may be only of a localised, transient and superficial character, or may be found distributed all over the body and may resemble the rashes of scarlet fever and measles. One form, the "lobster rash," is a very intense red erythema which is general all over the body; it is common in hæmorrhagic cases and is of grave prognostic importance.

The hæmorrhagic rashes, which appear from the first to the third day, are petechial or purpuric in character, and are perhaps more common than the above mentioned; from the fact that they are hæmorrhages into the skin, they remain for some time; hence they are more likely to be noticed. The rash appears at first as dull red areas and consists of two distinct elements—an erythema which can be removed by pressure, and a punctate petechial element which remains. The small punctate spots of dull red or purple colour are scattered or closely packed in one localised area, and may subsequently appear as a dull purple or yellow-red stippling. The usual site for these rashes is on the lower part of the abdomen, but always in the inguinal region, extending to about two inches below Poupart's ligament and on the inner side of the thigh. The rash spreads on the abdomen in an ill-defined manner, gradually fading off, and may spread towards the sides and back and upwards to the axillæ; when present it is of great diagnostic importance and is quite peculiar to this disease.

PAPULAR ERUPTION.

On the third day of the disease the characteristic smallpox eruption appears in the form of small red spots about the size of a pin's head, first seen on the face, forehead and wrists; they extend to the trunks and arms and lastly to the lower extremities. The lesions are most numerous on the face and extremities, much more so than on the trunk, and more numerous on the distal portions of the extremities than on the proximal portions. They are more numerous on the back and buttocks than on the abdomen. The eruption prefers the extensor to the flexor surfaces; hollows such as the anterior triangle of the neck, the axillæ, etc., frequently escape.

These spots in the early stage cannot definitely be felt as distinct elevations above the skin and disappear on pressure. Shortly after, however, they swell into raised pink papules, fairly hard and easily perceptible to the touch. They grow in size and can frequently be recognised as "shotty," but this depends on their position in the skin and the tension of the contents due to effused fluid. This "shotty" character of the papules is not to be relied upon as a diagnostic sign.

After a day or so, when they have become, in typical cases, rounded and defined, vesiculation develops, and at the beginning of the third day of the eruption the papules have become vesicular. These vesicles are loculated, and if pricked the clear contents will escape in small amount.

The loculation is due to trabeculae running through the interior, which divide the pock into several compartments. It sometimes happens that as the vesicle is distended with exuded fluid, strands uniting the floor and roof of the vesicle tie the centre down and produce an umbilicated appearance; this subsequently disappears as suppuration takes place; umbilication is also met with in some cases of chickenpox, and is, therefore, an unreliable sign in diagnosis.



FIG. 1.—A case of smallpox of moderate severity, showing the characteristic distribution of the rash.

These vesicles gradually become opaque and grey in colour and the contents become pustular. If distinct, each has an areola of inflammatory redness around it. As these pustules enlarge, the face, hands and feet become swollen.

This stage is reached about the sixth day of the eruption, and by the eighth, ninth and tenth day in favourable cases the pustules begin to dry up with the formation of crusts. This desiccation is usually first apparent on the face.

All these changes are best made out in cases of discrete smallpox; the majority of the large confluent pustules in severe cases burst, and

the contents, consisting of pus and other cellular *débris*, form scabs which encrust the surface of the body for some time.

When extensive areas of confluent pustules are found, the pocks never attain such large size as those which are isolated. The latter are chiefly found on the backs of the hands, fingers, arms, legs, and about the ankles and feet (see Fig. 1). These may become large, tense and yellow in colour.

The degree of danger to life is directly proportional to the amount of confluence of eruption.

The above gives an outline of the gradual evolution of the onset and eruption; on the appearance of the eruption all signs of constitutional disturbances disappear.

With the maturation of the papules and onset of suppuration the temperature again rises (secondary fever), and the most trying period for the patient is ushered in. In confluent smallpox, as found in the unvaccinated child, the secondary fever is always more severe than in the discrete form of smallpox. The patient becomes delirious, the pulse is small and feeble, and tongue dry and brown; sometimes a condition of intense restlessness or a fit of convulsions in children usher in a fatal issue, and this is particularly the case from the twelfth to fourteenth day. The formation of pocks on the tongue and other parts of the mouth, especially when they reach the swollen and suppurative stages, renders deglutition extremely difficult in bad cases owing to the irritated and inflamed state of the mouth. Respiratory complications are more frequent in children.

The mortality in unvaccinated infants and children ranges from 50 to 70 per cent.; children under two years of age seldom recover when the eruption is confluent, whilst those between five and ten years have a lower mortality than those under five years.

SMALLPOX IN VACCINATED CHILDREN.

What is the incidence and severity of smallpox in cases where vaccination has been properly performed in infancy? An examination of the annexed table shows in tabular form the results of the examination of 215 cases of smallpox in children under fifteen years of age, taken from the smallpox records of the Liverpool hospitals during the past ten years. It reveals the fact that amongst the well vaccinated no cases are to be found under two years, and only seven cases between two and five years of age.

215 Cases of Smallpox under 15 years, arranged according to Age-Period and Severity.

	Under 2 years.		2-5 years.		5-10 years.		10-15 years.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
A. Modified discrete and discrete	No cases	3	7	3	31	6	54	9
B. Profuse discrete and semi-confluent	No cases	9	No cases	15	3	15	8	19
c. Confluent and death	No cases	17	No cases	8	No cases	5	No cases	3
Total	No cases	29	7	26	34	26	62	31
Deaths alone	0	17	0	8	0	5	0	1

The same Group of 215 Cases of Smallpox, showing Percentage of Severity amongst the Vaccinated and Unvaccinated.

	Under 2 years.		2-5 years.		5-10 years.		10-15 years.	
	Vaccinated.	Unvaccinated	Vaccinated.	Unvaccinated	Vaccinated.	Unvaccinated	Vaccinated.	Unvaccinated
A. Modified discrete and discrete	No cases	10·3 %	100 %	11·5 %	91 %	23 %	87 %	29 %
B. Profuse discrete and semi-confluent	No cases	31 %	No cases	57 %	9 %	57 %	13 %	61·3 %
c. Confluent and death	No cases	58 %	No cases	30·7 %	No cases	19 %	No cases	9·7 %
Percentage case mortality vaccinated and unvaccinated	—	58 %	—	30·6 %	—	19 %	—	3·2 %

The immunity conferred by vaccination in infancy, which protected the infant so thoroughly in early life, gradually loses its effect, and cases begin to appear amongst the older children, never, however, with such serious effects as those to be found amongst

unvaccinated children. Indeed, between 2-5 years all, or 100 per cent., are very mild cases, between 5 and 10 years over 90 per cent. are very mild, and between 10 and 15 years over 80 per cent. are in the same category. No severe cases are to be found.

The accompanying Fig. 1 shows the character of the eruption in a case of moderate severity; the distribution of the rash is particularly well shown.

Having shown that it is of extreme rarity to come across a case of smallpox in vaccinated children under five years of age, it will be of interest to examine the following family group which illustrates the gradual loss of immunity.

Case.	Age.	Number.	Scar-area.	Character of disease.	Remarks.
1	4 years	1	$\frac{3}{8}$ sq. inch.	Modified discrete	Papules very few, not over 7-8, and not vesicular
2	7 "	1	"	Ditto	Ditto
3	9 "	1	"	Ditto	Papules few, more numerous than in Cases 1 and 2, not vesicular
4	12 "	1	"	Modified discrete mild	Papules very numerous, became vesicular, but soon dried up
5	15 "	1	"	Ditto	Ditto
6	37 "	3	$1\frac{1}{8}$ sq. inch	Discrete	Eruption more marked than in the children, and passed through the characteristic stages.

This series shows the gradual loss of the modifying power in the vaccination as age advances, and it is interesting as shown in the same family, the vaccination scar-area being the same in each case, except in the mother, whose scar-areas were much larger, and therefore her protection showed a proportionally larger degree of modifying power.

CONCURRENT SMALLPOX AND VACCINIA.

Another interesting aspect of smallpox amongst children is its occurrence concurrently with vaccination. This happens occasionally when the pregnant mother has been admitted to hospital with smallpox and her child is born in hospital, is vaccinated on birth, but too late to prevent the development of the disease. It also occurs during the vaccinations carried out amongst the contacts of a household when a case of smallpox has developed. The effect of the concurrent vaccination on the subsequent smallpox is of extreme

interest. The concurrent vaccination performed on a susceptible infant, if it does not entirely prevent, as it will do if performed within one or two days of the day of infection with smallpox, is found to modify the disease in the following directions. The papules may be very few and limited to isolated parts of the body; they pass,



FIG. 2.—A case of smallpox modified by vaccination. The baby was vaccinated successfully at the end of third day of incubation. (Case 3.)

however, through the typical course of evolution; in addition to the limitation of papules the eruption itself is frequently modified, the lesions being superficially placed and maturing rapidly, the crusts rapidly inspissating and dropping off.

It is found that this concurrent vaccination, if done within the first three days of infection, has the effect of almost entirely neutralising the smallpox so that no symptoms or signs of the disease appear, or

the attack will be very mild, such as the appearance of a few papules, which may never become vesicles, but simply die away.

The later in the course of the incubation stage that vaccination is performed, the more severe is the type of disease which appears, this varying with individual susceptibility, but the disease is never more than of moderate severity; if the vaccination is attempted subsequently to the development of symptoms, it does not "take" in the typical way and the disease pursues its normal course, being usually, as already stated, of a very severe type.



FIG. 3.—A case of smallpox modified by vaccination. The vaccination was successfully performed on the eighth day of incubation; the eruption was profuse, yet complete recovery took place. (Case 6.)

An instructive series of concurrent cases in infants and children is shown in the following series. The majority of them were born in hospital of variolous mothers and vaccinated within a few days of infection; two are shown to have been infected *in utero*.

CASES 1 and 2.—Nursed by smallpox mothers, and presumed to have been infected with smallpox on the day of birth and the day following respectively. They were vaccinated within twenty-four hours with entire absence of development of any symptoms or signs of the disease. They were nursed in a smallpox ward, with other

patients, by their own mothers who had smallpox and until the mothers were convalescent and discharged.

The vaccination was entirely successful and protection was afforded.

CASES 3 and 4 were vaccinated late in the incubation period. Case 3 was vaccinated successfully at the end of the third day of incubation. The mother nursed the child, who had a very mild attack. The eruption was very sparse and scattered (twenty papules



FIG. 4.—A severe case of smallpox in an unvaccinated baby. The eruption is very profuse and shows a typical distribution.

in all). The individual papules passed rapidly through the preliminary stages to pustulation (see Fig. 2).

CASE 4 was vaccinated on the fourth day and had a very mild attack.

CASE 5 was vaccinated on the fifth day of incubation (the day following birth) and showed a more profuse eruption of smallpox than the previous cases. This baby was infected *in utero*.

CASE 6.—This baby was only vaccinated eight days after infection; the eruption was fairly profuse, but complete recovery took place (see Fig. 3).

CASE 7.—The infant was infected *in utero* and was not vaccinated until the ninth day after infection. In this case the vaccination was carried out too late to neutralise or modify the course of the disease. The papules were very numerous and unmodified. The child died.

It is of interest to note that vaccination, in rendering attacks of smallpox which may succeed it of much less severity, and therefore less dangerous, does not in all instances diminish the intensity of the primary fever, and the initial symptoms are sometimes sharp and severe.

SMALLPOX IN UNVACCINATED CHILDREN.

As already mentioned, smallpox in unvaccinated children is always very severe (see Fig. 4). A glance at the table on p. 7 will show the percentage of cases to be found amongst the unvaccinated children at each period up to fifteen years, and also the degrees of severity, and it will be evident that 50 per cent. of the cases are of the confluent type and die; whilst only 10 per cent. escape with a mild type of eruption. In spite, then, of the best medical knowledge as regards treatment, the mortality is almost as heavy as in the seventeenth and eighteenth centuries. Contrast this with the total absence of cases in vaccinated children under two years of age, and 100 per cent. of mild cases between two and five years, the deaths being absolutely *nil* up to fifteen years amongst the vaccinated. Such are the peculiarities of smallpox as found in vaccinated and unvaccinated infants and children.

DIAGNOSIS.

The diagnosis of smallpox from certain other diseases, especially of infants and children, is of great importance and requires great care; it is convenient to divide the question of diagnosis under three headings, according as to whether the disease is in the early, eruptive or late stage. In the early period before the papular rash appears the diagnosis may be difficult, and the disease may simulate such diseases as influenza, lumbago, or an acute febrile attack. In lumbago there will be an absence of fever, but in influenza the history will be the only guide, and it may be often necessary to wait until the eruption takes place, because fever and backache are common.

Should a prodromal petechial rash appear of typical character and distribution with associated pyrexia and symptoms as previously mentioned a positive diagnosis can probably be made.

The rash may be scarlatiniform in appearance, and in this case the vomiting, the condition of the tongue, the swelling and reddening of the fauces with enlargement of the cervical glands will help in distinguishing scarlet fever from smallpox. The early scarlatiniform rash of variola is found chiefly on the extensor aspects of the limbs, but these rashes are rare in children.

The initial sickness and vomiting of scarlet fever also resemble that of smallpox, but are not of so long continuance. The cases most likely to be confusing are those where a scarlatiniform rash precedes a case of hæmorrhagic smallpox.

Rashes which closely simulate the initial or hæmorrhagic rash of smallpox are the various forms of purpura hæmorrhagica, but the constitutional symptoms, pyrexia, etc., associated with the onset of smallpox, are absent.

In the early stage of eruption the rash resembles that of measles, but in measles the rash appears on the fourth day of illness, catarrhal symptoms are present, and the temperature continues to rise after the rash appears, whilst in smallpox the rash appears, as a rule, on the third day and the temperature falls and symptoms subside. Gastric disturbance is less marked. The initial measles-like rash of smallpox is not found on the face, and this distinguishes the onset of measles; in the latter disease there are also catarrhal symptoms and Koplik's spots.

In the vesicular stage smallpox resembles chickenpox and great difficulty may be experienced in distinguishing them. In the first place, adults are less frequently the subject of chickenpox, but an abundant eruption of chickenpox may mislead a physician, and chickenpox in adults may be associated with headache and back-ache.

The chief and important point in the diagnosis of smallpox is the relative distribution of the rash on the different parts of the body and this ought to be particularly emphasised. In text-books, as a rule, the particular character of the papules, vesicles and pustules is minutely described, and the distribution, the most important guide from a diagnostic standpoint, is overlooked and more weight given to "shottiness" and "umbilication." Of course it must be clearly recognised that the diagnosis of smallpox cannot be wholly grasped from text-books; it must be studied clinically. The lesions of chickenpox are marked on the chest and back. They also appear numerously on the face, but several hours later. On the extremities they are much less marked, and when present, are more on the proximal than the distal portions.

The lesions of chickenpox are more superficial than in smallpox, and in contrast with smallpox vesicles, which are circular or uniform in character and mature in a manner depending on the day of the eruption, the chickenpox vesicles are variable in shape, round or irregular, whilst they mature rapidly, come out on the trunk first and following in crops in the course of a few hours. On examining the rash, say, twenty-four hours after eruption on the back, one sees numerous lesions, irregular in shape and size in different stages of evolution, some in the papular stage, others in the vesicular or pustular stages or ruptured and forming scabs.

Too much stress must not be laid on the multilocular character of the smallpox vesicles when pricked, for it is unreliable; this also applies to the question of umbilication.

Drug rashes sometimes resemble initial and other smallpox rashes, *e. g.* copaiba may produce a generalised erythematous rash. Cases of urticarial rashes or poisoning by shellfish may closely simulate smallpox; there may be several days' illness or debility and a characteristic eruption on the face and extremities, but the limited area of distribution, absence of backache and fever will suffice to distinguish them. Iodide and bromide rashes can easily be distinguished by the absence of initial symptoms and history.

In addition to chickenpox the following diseases with pustular eruptions may simulate smallpox in the later stages of eruption. In the case of syphilides careful inquiry into the history and the manner of eruption and its colour, the presence of copper-coloured scaly papules along with the pustules and the presence of enlarged glands may help in the diagnosis.

Various forms of acne with large pustules on the face may resemble those of modified smallpox; similar lesions are also frequently found on the shoulders and have been mistaken for smallpox, but there is an absence of a vesicular stage, constitutional symptoms or pyrexia.

Herpes has also been mistaken for smallpox, but the eruption has a different distribution and there are no initial symptoms similar to smallpox.

Scabies is a disease which frequently simulates smallpox, especially in bad cases where there is bullous impetigo or eczematous surfaces, caused by scratching, and in those where some of the lesions occur on the face, to be found more commonly in babies at the breast. The presence of itching, however, and the polymorphous character of the eruption will easily guide one.

There is a disease, uncommon in this country, which simulates

smallpox and chickenpox. It is chiefly found in the United States, but cases have occasionally been imported; it is due to a small mite which infests grain and straw causing "straw itch" (dermatitis Schambergi). When this mite becomes abundant in straw it will attack the labourers, but may also attack those who sleep on mattresses made from the straw.

The eruption is made up of wheals surmounted by a vesicle and the contents ultimately become turbid and pustular.

The lesions are most abundant on the trunk and are slight on the face and extremities. Attention must be given to the history, the character of the onset and eruption.

It must be clearly recognised that the effects of vaccination in modifying not only the extent, but also the character of a smallpox eruption, may cause some difficulty in diagnosis, and many of our main diagnostic points may have to be reconsidered in this light, especially that of relative density of eruption.

THE NERVOUS COMPLICATIONS OF VARICELLA.

By REGINALD MILLER, M.D., M.R.C.P.,

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NERVOUS complications in varicella are so rare that they receive no attention in the majority of descriptions of that infection, nor were any instances quoted in a discussion held in 1894 upon the forms of paralysis following various infective disorders (39). Practically the only paper dealing with this particular subject is one by Caccia (7) published in 1904.

Varicella being so common and associated nervous lesions so rare, it might be held that the connection between them is merely casual and not causal. There seems, however, to be good clinical evidence that focal lesions of the central nervous system (encephalomyelitis) may complicate varicella, although it must be allowed that the evidence for encephalitis is curiously stronger than that pointing to spinal cord lesions. Possibly these focal lesions are analogous to the lesions of the skin and mucous membranes in varicella.

The nature of the illness in varicella would not appear to favour

the possibility of such toxic nervous complications as peripheral neuritis, and although such cases have been reported the evidence for them is not entirely satisfactory.

The association between varicella and herpes zoster has been pointed out by several observers and quite recently several fresh cases have been reported in the English medical journals.

Numerous other complications, rather less directly associated with varicella infection, have been recorded and are here reviewed.

In this paper we bring forward a new case of encephalitis complicating varicella and review the other examples of nervous complications hitherto reported.

ENCEPHALITIS.

(1) The following case has recently been under our care :

A boy, aged 2½ years, developed a mild attack of varicella. The rash was moderate in amount and the constitutional symptoms were not severe, the temperature not exceeding 100° F. Nothing unusual was noticed until the morning of the fifth day, when after a normal night the child was found to be unable to stand, unable to talk distinctly, and to show a tremor of the limbs, head and tongue. The onset of these symptoms was not associated with any fresh rash or rise of temperature. The tremor of the tongue quickly passed off, but when the child was seen four days later the tremor was very marked in the limbs. It was a slow rhythmic movement, which prevented him from standing without support. The movements of the limbs, particularly of the arms, were slow and stiff. There was no loss of emotional expression but the child was irritable and emotional. The cranial nerves and reflexes were normal. From the similarity between this case and those to be referred to immediately a good prognosis was given. In a few days the tremor gradually diminished until it became only noticeable during excitement, and at the end of a month from the time of onset it had practically disappeared altogether. Since then the boy has become quite normal again except that he is thought to be a little more excitable than previously.

The character of the tremor in this case and the general appearance of the child (as though he were shivering) were exactly similar to those seen in cases described by one of us under the title of "Acute Tremor" (27). These were regarded as due to a destructive lesion of the cerebello-rubro-spinal system. In the previous cases the cause was held to be an encephalitis due to the same agent as attacking the cord produces acute poliomyelitis. In the present case we would regard the localisation of the lesion as similar, but its origin connected directly with varicella. Possibly the brain lesion was of a similar nature as the lesion produced by varicella in the skin and mucous membranes.

(2) A very similar case has been reported by Caccia (7).

A boy, aged 3 years, developed tremor of the limbs on the fifth day of varicella. Its onset was preceded by two days' vomiting. The tremor was most marked in the right

arm. The boy was unable to stand erect. The speech was slow but not scanning. There seemed some weakness of the right leg; no sensory or electrical changes. The muscular tone was somewhat in excess, ankle clonus, increase of the knee-jerk and extensor plantar response were present on the right side. Cerebro-spinal fluid was sterile, containing 0.3 per cent. albumin. At the end of four weeks all symptoms had disappeared. Caccia regarded the case as one of encephalitis of the left cerebral hemisphere.

(3) Marfan (24) records a clear case of encephalitis affecting the oculo-motor nuclei.

A girl, aged 22 months, developed, a few days after the onset of varicella, bilateral ptosis, divergent squint and immobility of the eyes, except in abduction. Reaction to light and accommodation were preserved. A few months later, Rolleston (32) mentions, the child had recovered except for a slight degree of sluggishness in the levatores palpebrarum.

(4) Osler (31) notes a case of infantile hemiplegia complicating varicella.

Other possible examples of encephalitis are less satisfactory. Koplik (21) has described two cases of boys developing on the tenth and fourteenth days of varicella a condition resembling one of tuberculous meningitis with increasing sopor, with restlessness and delirium, mild hydrocephalus, paresis of all four extremities, and in one case, difficulty in swallowing. He regarded them as instances of polio-encephalitis, but as both cases made a good recovery without developing any paralysis, they would possibly be called by many examples of meningismus.

Bouvy (5) has recorded a case of *sclérose en plaques* developing in a child of three years old soon after varicella. Bearing in mind Batten's views on the rarity of this condition in children, and the similarity between it and cerebellar encephalitis, it is possible that this case was an example of the latter condition.

POLIOMYELITIS.

The only case recorded under this heading is one by Marfan (25), but a glance at the title of his paper shows that the clinical condition was very complicated and the case is not a very satisfactory one for our purpose.

Rossi (33) records a very suggestive case of flaccid paralysis of the right arm occurring in a boy of eleven months and developing with the onset of the chickenpox rash. Accident could be excluded, and the author regards the condition as one of toxic origin due to the varicella toxin. He excludes a spinal cord lesion since no atrophy of the muscles supervened, but the paralysis very quickly disappeared

18 THE NERVOUS COMPLICATIONS OF VARICELLA.

so that this does not seem a satisfactory argument. The case is one which strongly suggests to our mind a poliomyelitis.

A very difficult case has been reported by Gay (10) as one of peripheral paralysis following varicella. In a child aged $2\frac{1}{2}$ years, a fortnight after the onset of an attack of varicella of moderate severity there developed suddenly flaccid paralysis of the lower extremities together with complete loss of sensation in the affected parts. The knee-jerks and plantar responses were absent, the abdominal reflexes brisk, the cremasteric dull. The author discusses the site of the lesion in this case and decides in favour of a peripheral rather than a central origin. Against this view, as he admits, is that the paralysis was of sudden onset, which would seem more suggestive of a wide-spread spinal cord lesion.

PERIPHERAL NEURITIS.

The cases reported by Rossi and Gay have already been discussed. The only other one we have been able to find in the literature is recorded by Allaire (1). A boy, aged 8 years, developed varicella. In addition to a wide-spread rash of ordinary nature there were two large bullæ which suppurated and formed ulcers which lasted for some weeks. The child also had a purulent discharge from one ear. A month after the onset of the rash the patient's voice became nasal in character and he regurgitated liquids through the nose. After a fortnight this began to improve, and at the same time the suppuration ceased in the ear and the ulcers on the skin cicatrised over, but there developed gradual loss of power in the left arm. The paresis was flaccid in type, the muscles showing slight atrophy with reaction of degeneration. Sensation was unimpaired. A few days later the child complained of diplopia, which was regarded as due to the paralysis of some muscle of the eye. Reaction to accommodation was normal.

Accepting the diagnosis of peripheral neuritis it is not easy, as the author admits, to be clear as to its cause. It is difficult to set aside the diagnosis of diphtheria, either faucial or cutaneous, in view of the paralysis of the soft palate. On the other hand, the possibility of variola must be considered, and both these considerations are difficult to dispose of, since the author did not see the case until the paralysis of the arm developed. Thirdly, the presence of foci of suppuration, which lasted for several weeks, makes the case rather different from an ordinary one of varicella. On the other hand, the author, after due consideration, regarded the neuritis as the effect of varicella.

HERPES ZOSTER.

The occasional association of herpes zoster and varicella has attracted the attention of a number of writers. It seems first to have been mentioned by Bókay (3) in 1892, and this author in 1909 (4) draws more definite attention to this associated condition. Cases have been recorded by Head (14), Corlett (11), Tremolières (37), Tourneux (36), Heim (15), and quite recently in English literature instances have been reported by Le Fenore (12), Jones (19), Bruce (6) and Walker (38).

The cases appear to fall into two groups. In one, an eruption of herpes zoster is rapidly (within twenty-four hours) followed by an ordinary rash of varicella. In the other, a malady which has passed as an attack of herpes has appeared to have been the source of varicella in others. It is possible that occasionally focal lesions similar to those which apparently may occur in the central nervous system may originate in the posterior root ganglia, thus producing an herpetic eruption.

OTHER NERVOUS COMPLICATIONS.

Convulsions complicating varicella have been the subject of contributions by Hunter (16), Kassowitz (20), Tham (35), and Cerf (9).

Intracranial complications of otitis media are rare complications of varicella. Lannois (22) states that chickenpox vesicles may occur in the ear and may set up otitis media and mastoiditis. Moy (28) describes the severe intracranial complications of otitis media (meningitis abscess and lateral sinus thrombosis). According to Jacod (18) the aural lesions of varicella are usually much milder than those of scarlatina or diphtheria, even mastoiditis being very rare.

Optic neuritis.—One case of this complicating varicella has been recorded by Chavernac (10). This author refers to another case, at that time unique, recorded by J. Hutchinson, jun. Antonelli (2) previously referred to this case of Hutchinson's as unique. Reference to Hutchinson's paper (17) shows, however, that the case of "a young woman of 28 years" was one of optic neuritis accompanying a secondary syphilitic eruption which was mistaken for variola! Chavernac's case seems, therefore, to be the only one recorded of optic neuritis complicating varicella.

Hæmorrhagic internal pachymeningitis has been recorded in a child, aged 13 months, by Mya (29). A delicate child with a

meningo-encephalocoele protruding through the anterior fontanelle developed, nine days after the appearance of varicella, clonic twitchings of the lower part of the right side of the face. These spread to the left side and the child was feverish. The lateral ventricle was punctured and blood-stained fluid was withdrawn. The child died on the next day. Post mortem, a condition of hæmorrhagic pachymeningitis was found which was regarded as solely due to the varicella.

Sclérose en plaques has been described by Bouvy (5) as developing soon after varicella in a child, aged three years. This has already been discussed.

Neuromyositis has been recorded in a single case by Camus and Sézary (8). A child, aged 6 years, developed on the third day of varicella a painful contracture of the legs, which later showed atrophic changes. Five years afterwards there was still marked hyperæsthesia of the nerves and limbs with wasting and contractures. The case was regarded by Dejerine, in agreement with the authors, as one of polyneuritis with myositis.

Chorea has been noted to develop at the end of an attack of varicella by Menko (26), Netter (30), and Mackenzie (23).

Tuberculous meningitis has been recorded as a sequel to varicella by Castro Soffia (34).

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PSORIASIS IN INFANCY.

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PSORIASIS, that common but nevertheless obscure skin disease, is undoubtedly rare in infancy, although common enough in later childhood. Those authors who have taken the trouble to compile statistics relating to the age of incidence of the disease are agreed that in the majority of cases it first makes its appearance between the ages of six and sixteen years. Below the age of six it becomes less and less frequent as the age diminishes. Bulkley, the American dermatologist, who has paid particular attention to psoriasis, upon the treatment of which he holds peculiar vegetarian views, says that out of 366 cases he found that six began between the ages of four and five, five between three and four, and four between two and three years. The rarity of the disease in infancy is shown by the fact that in the first edition of his book Hebra stated that psoriasis was not seen below the age of six years. He had, however, subsequently to modify this statement, and Hebra's pupil and successor, Kaposi, published a case in a baby of eight months. Moreover, psoriasis was certainly recognised long before the time of Kaposi as occurring in early infancy, for in 1829 Billard published a case in a baby, aged two months, and the celebrated English dermatologist, Willan, described a special variety of psoriasis as psoriasis infantilis. Nevertheless, so recently as 1906, Burnet, in a paper on the ætiology of psoriasis, read before the Society for the Study of Disease in Children, stated that it was doubtful whether psoriasis occurred before the fifth year. In the times before the Wassermann reaction, probably some cases really psoriatic were labelled syphilitic, but all the same a fair number of undoubted cases of psoriasis in young infants are to be found in the literature.

The youngest which I have found recorded was published by Rille from Vienna as far back as 1895. The eruption seems to have started within a few days of birth, but was not seen by Rille until the baby was $5\frac{1}{2}$ weeks old, when the mother brought it up, not on account of the psoriasis, but for a troublesome eczema intertrigo or napkin rash. The father of this infant had suffered from psoriasis from the age of twenty, but it had three elder brothers and sisters who were, at any rate at the time of publication, free.

I have also found three other cases in which the disease made its appearance during the first year of life. They are :

(1) MacLeod's case of an infant, aged 6 months, in which the disease, diagnosed by the female members of the family as "chicken-pox," and therefore disregarded, had first appeared at the age of three months. It came under notice on account of napkin erythema. In this case there was no family taint.

(2) Abrahams' case in America, occurring in an infant first seen at the age of twelve weeks, but which had been present since seven weeks from birth. In this case no record of the family history is given.

(3) Benassi's case of an infant, aged 4 months, in whom there was a strong family taint.

The present case is that of a healthy-looking and thriving infant, aged 6 weeks, in which, according to the mother, the eruption had been present about a week when first seen by me. The eruption was very extensive, the greater part of the trunk, both on the ventral and dorsal aspects, was involved, and there were also large areas upon the limbs. The extensor surfaces of the limbs were a good deal more affected than the flexor, but the actual points of the elbows and knees were not worse than any other part. A somewhat remarkable feature was the involvement of the face, the central part of which was affected strongly, and the eruption also extended upward over the forehead on to the scalp, which was covered with a thick crust. Where the scaly erythematous eruption abutted on the healthy skin the dividing line was seen to be circinate, indicating that the eruption had originally consisted of circular patches, which had subsequently coalesced. The buttocks were affected with a napkin erythema of the ordinary type, and here it may perhaps be noted that many of these babies with psoriasis seem to have suffered in this way. This may be merely a coincidence or their skins may be specially sensitive. I am inclined to the view that it is merely a coincidence. The baby was the youngest of four brothers and sisters, aged respectively eleven, seven and four. All were healthy. I made careful inquiry, but could find no evidence of the presence of psoriasis in other members either of the father or mother's family. Naturally the possibility of this eruption being syphilitic in character was carefully considered, but not only was there no suggestion that such was the case from the healthy appearance of the child and the clear family history, but the Wassermann reaction was tested and found to be negative. The only other alternative diagnosis was that of seborrhœic dermatitis. This diagnosis was strongly supported by Dr. Adamson when the case was shown at the Dermatological

Section of the Royal Society of Medicine, but at that time the eruption had almost disappeared, except from the scalp, although a certain amount of erythema remained on the buttocks. Dr. MacLeod also on the same occasion remarked that the case referred to above, which he originally published as a case of psoriasis, he had afterwards reconsidered, and altered his diagnosis to seborrhœic dermatitis. Nevertheless, I adhere to my original diagnosis, especially as the disappearance of the eruption took place under the influence of liquid paraffin alone, without the application of any antiseptic. Seborrhœic dermatitis is usually refractory unless sulphur is used. Psoriasis in early childhood, *i. e.* at the age of four or five years, when it undoubtedly is sometimes seen, often yields, for the time at any rate, quite readily to treatment. The criterion which I chiefly value of the correctness or otherwise of my diagnosis is the possible recurrence of the eruption. If it recurs I shall claim that I am right; if it does not I shall confess that I am wrong.

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The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, October the 24th, 1913.

The President, DR. LEONARD GUTHRIE, in the Chair.

Two Cases of Infantilism.—Dr. C. E. ZUNDEL.—Case 1: Girl, aged 13 years. Eldest of three; others healthy. Mother has had no miscarriages. Full-time child, "very small at birth." Previous health: Measles at the age of four months, "anæmia" occasionally. Present complaint: "Does not seem to have grown since she was five years old." Condition: Height, 3 ft. 6 in.; weight, 2 st. 10½ lb. Face intelligent, skin dry; hair fair, rather coarse, and not so long as that of her six-year-old sister; no suggestion of appearance of puberty; organs of thorax and abdomen apparently healthy. Urine: Acid, pale, specific gravity 1004, contains $\frac{1}{20}$ albumin, and a few granular and fatty casts are found in the centrifugalised specimen.

No polydipsia; occasional nocturnal enuresis. Mental faculties good, but slightly "backward" for her age at school. Began to talk at the age of nine months. Disposition quiet, not mischievous.

Case 2: Boy, aged 13 years. At the age of $2\frac{1}{2}$ years he was in hospital for a week with a sore throat. Since then he has had polydipsia. No other illness before or since, but his excessive thirst has been constant. He has spent about six years in various infirmaries for this condition. Family history: Father said to have had "diabetes" since childhood; died at the age of 47 years of pneumonia. He was twelve years in the Army, and was known among his comrades as the "water barrel." One brother died at the age of 7 years; he had had diabetes insipidus for five years. One sister, aged 14 years, is living and healthy. The mother is living. No history of other cases of diabetes insipidus in the family can be obtained. Condition: Thin, childish, weight 2 st. $1\frac{1}{2}$ lb.; height, 3 ft. 6 in.; thymus, thyroid and pituitary gland apparently normal; blood-pressure, 100 mm. Hg. Drinks on the average 14 pints *per diem*. Dislikes sweet things; appetite is poor. Urine: Specific gravity 1001; no albumin, no sugar, no casts; urea 0.5 per cent. Wassermann reaction negative. Carbohydrate tolerance 220 gr. sucrose. Miserable disposition.

Constriction of Arm by Amniotic Bands.—Dr. E. A. COCKAYNE.—Girl, aged $3\frac{1}{2}$ years. The confinement was a difficult one, but nothing was discovered to account for the condition of the arm. There are two other children: the first, a girl, aged 6 years, has a raised capillary nævus on the right side of the abdomen; the third, aged 1 year 10 months, has a similar nævus on the shoulder. The mother calls them respectively a strawberry and a raspberry, and thinks they become brighter when those fruits are in season. All three children have convergent strabismus. There is a narrow fibrous band which completely encircles the upper arm on the right side and causes slight constriction, and another which deeply constricts the arm just above the wrist; in flexion—the intra-uterine position—the two scars are at the same level. The scar-tissue is adherent to the deeper structures and the bone feels grooved, but a skiagram shows that it is not involved. The right arm and hand are well developed and larger than the left, showing that there has been no pressure on the arteries. Right upper arm $1\frac{1}{2}$ in. above elbow, $6\frac{3}{8}$ in.; left upper arm $1\frac{1}{2}$ in. above elbow, $6\frac{1}{4}$ in.; right forearm 2 in. below elbow, $5\frac{7}{8}$ in.; left forearm 2 in. below elbow, $5\frac{3}{4}$ in.

Hemiplegia with very Extensive Nævus.—Dr. E. A. COCKAYNE.—A girl, aged 1 year 4 months. The birth was easy, but the nurse said the child was "born in convulsions." The mother attributes the condition to her having seen a cripple with a very large birth-mark when she was three months pregnant. The mother noticed the nævus at birth, but is not sure whether the hemiplegia was present then or came on later. It was first noticed after the child had had a severe left-sided fit at the age of six weeks. She has had similar fits at intervals up to the age of one year; at eight months she had nine in two days. There has been some "shaking" of the left arm. The child appears to be quite intelligent and is beginning to talk. There is complete left hemiplegia with spasticity of the arm and leg, and the left side, including the face, is noticeably smaller than the right. The bones are seen by X rays to be shorter on the left side. There is very extensive port-wine staining of the skin of the scalp, face, arms, legs, and part of the trunk. It is fairly symmetrical and follows a posterior root distribution. The areas of

skin supplied by the first dorsal and the fourth to eleventh dorsal nerves inclusive are completely free, but almost all the rest of the body is more or less involved. Wassermann's reaction is negative.

Case of Rheumatoid Arthritis in a Boy.—Dr. J. PORTER PARKINSON.—A boy, aged 5 years, has had "growing pains" all his life, and for the last year has been treated for pains in the limbs, and has been in bed on and off since June this year. He had bronchitis at the age of two years, and measles last Christmas. The mother suffers from "rheumatism." In July, on admission to hospital, he was pale and thin, with wasted muscles. The knees, ankles, wrists and elbows were swollen and spindle-shaped, with soft, pulpy swelling. They were slightly tender on manipulation, but did not creak. No evidence of intra-articular fluid. The other joints presented nothing abnormal. Enlarged glands could be felt in the axillæ and groins, but the spleen could not be felt and showed no evidence of enlargement. Chest and abdomen *nil*. Teeth good; no evidence of gastro-intestinal derangement. Weight 2 st. 1 lb. Wassermann and von Pirquet's reactions negative. Temperature, 98° to 99° F., occasionally up to 100° F. He was treated by massage, etc., a course of arsenic internally, and, later, by rectal injections of polyvalent anti-streptococcus serum without effect. He left the hospital at the end of July, and on re-admission in October, in addition to the conditions described above, there were spindle-shaped enlargements of all the joints of the fingers and slightly of the metacarpo-phalangeal joints of both hands, and the left hip-joint had become fixed in partial flexion. He was somewhat thinner and his general condition was worse. Dr. Parkinson proposed to try a course of radium water.

Three Cases of Under-development.—Dr. T. R. WHIPHAM.—Case 1: Rickety boy, aged 2 years 3 months, the fourth child in a family of five; the others are living and said to be healthy. The patient was a full-term child and was fed at the breast for six months. He was then given cow's milk and water, but he did not thrive, and subsequently Nestlé's milk and Ridge's food were tried. He sat up at the age of 6 months, but has never walked. The first tooth was cut at the age of 2 years (?). He is said to have talked at an early age, but he speaks very seldom and indistinctly. The child is very undersized, being only 2 ft. high, which is 9 in. below the normal and less than the average for a child of 6 months. His weight is 11 lb., or 1 st. 8 lb. below the normal. Circumference of head, 17 in. (normal, 19 in.); of chest, 15 in. (normal, 19 in.); of abdomen, 17 in. The epiphyses are slightly enlarged, and there are definite signs of rickets in the chest and a marked kyphosis in the lower part of the spine. The anterior fontanelle is open, and the patient has seven teeth instead of the full complement of fourteen. The liver is not much enlarged, and the spleen cannot be felt.

Case 2: Boy, aged 8 years, of diminutive stature, but well proportioned and intellectually bright. Height, 2 ft. 9 in. (normal, 3 ft. 11 in.); weight, 1 st. 8½ lb. (normal, 3 st. 13 lb.); circumference of head, 18½ in. (normal, 20½ in.). The patient was a full-term child, and has eight brothers and sisters, five older and three younger, all of whom are of average size. He presents no signs of rickets, but suffers from tuberculosis of the skin and subcutaneous tissues. The urine is normal, and does not contain albumin. He has been treated with thyroid extract, and more recently with poly-

glandin. During the last six months he has grown 1 in. and has increased $2\frac{1}{2}$ lb. in weight.

Case 3: Girl, aged 18 years, showing signs of hypothyroidism. The patient has been noticed to be small since the age of 7 years, and now has the development of a girl aged 10, her height being 4 ft. $1\frac{1}{2}$ in. (normal for her age, 5 ft. $2\frac{1}{2}$ in.), and her weight 4 st. $10\frac{3}{4}$ lb. (normal, 8 st. 9 lb.). In early life she is said to have had "marked rickets"; the chest still shows a rosary, and the head is square. The features are somewhat coarse. Her skin has always been dry and harsh, and formerly she had definite pads in the neck. Her hair, on the other hand, has always been fine, but lately it has lost its gloss. Movements have always been slow, and the patient suffers from the cold in the winter time. There is an absence of mammary development, also of both pubic and axillary hair, and menstruation has not yet occurred. The girl has attended school, but was not quite up to the normal standard, and her memory is not good. She had no treatment until she was twelve years of age, when she was given thyroid extract for about a year. She has three sisters, all of whom are normal.

Enlargement of the Liver and Spleen associated with Jaundice.

—Dr. T. R. WHIPHAM.—The patient is a girl, aged 6 years, who was born jaundiced. The colour was "green-yellow," and the condition lasted for six weeks. Since then no jaundice has been noticed until February of this year, when the icterus again appeared suddenly. There was epistaxis, and the jaundice gradually became more marked. When the patient was first seen in May she was deeply jaundiced, being of an olive-green-yellow colour all over. The liver was greatly enlarged, reaching to the umbilicus, and the spleen was also of a considerable size, extending down to nearly the same level, but not to the middle line. The blood-count at this time showed: Red corpuscles, 4,824,000 per cubic millimetre; white cells, 15,200 per cubic millimetre; polymorphonuclears, 39 per cent.; lymphocytes, small, 53 per cent.; lymphocytes, large, 6 per cent.; eosinophiles, 2 per cent. No myelocytes nor mast-cells seen. The motions were brown or yellow in colour—not acholic; but the urine was deeply coloured and contained bile-pigment. The Wassermann reaction was negative. For over three months the child continued deeply jaundiced, and presented no further symptoms. During the last two months, however, the jaundice has gradually been getting less, and now only a faint coloration remains. The liver at the same time has decreased in size until its lower edge is $1\frac{1}{2}$ in. above the umbilicus. The spleen, on the other hand, is a trifle larger.

A recent count shows a change in the blood-picture. There are now: Red corpuscles, 2,360,000 per cubic millimetre; white cells, 38,000 per cubic millimetre; polymorphonuclears, 50 per cent.; lymphocytes, small, 28 per cent.; lymphocytes, large, 4.7 per cent.; myelocytes, 13.3 per cent.; eosinophiles, 3.7 per cent.; mast-cells, 2.2 per cent. Nucleated red corpuscles are present, and a few of the myelocytes contain eosinophile granules. Hydropic degeneration of the nucleus is frequent, especially in the myelocytes and large lymphocytes. The urine is still pigmented and contains bilirubin, but no urobilin. The child is obviously anæmic, and a hæmic bruit can be heard over the base of the heart.

There are two other children in the family, one older than the patient and one a baby, and both are healthy. There is no history of syphilis.

Congenital Insufficiency of Ocular and Facial Movements.—

Dr. LEONARD GUTHRIE.—Boy, aged 4 years, born at full time and labour

easy. Imperfect closure of the eyes was noticed at birth, and also that his face was devoid of expression. His mother states that "he has never been known to smile."

Present condition: Intelligence normal, speech somewhat defective, general nutrition and development fair. The whole of the face is motionless as far as the mouth; the skin of the face is smooth and not tightly stretched. The visage resembles in some respects the "myopathic facies." The eyes cannot be fully closed, the eyeballs are in mid-position, and the only ocular movement which can be performed is convergence, downwards and inwards. The pupils are equal, active to light, less so on accommodation. When crying, tears are shed, but no facial contortions are visible; laughter is only represented by guttural grunts. The upper lip projects slightly and is flabby; the lower lip is not everted as in myopathy. The orbicularis oris is not paralysed, for he can purse his lips and also blow out his cheeks, though feebly. The escape of the orbicularis oris is probably due to association of its action with that of the tongue, the movements of which are normal. Movements of the palate and masticatory muscles are also normal. Electrical reactions cannot be obtained in any of the facial muscles except the orbicularis oris.

The condition is regarded as an unusual form of myopathy affecting muscles supplied by the third and seventh nerves.

A Case of Cretinism.—Dr. FREDERICK LANGMEAD.—Female baby, aged 5 months. The patient is a firstborn child whose mother is aged 30 years and father aged 25 years. There is no history of thyroid disease in the family. The appearance is characteristic: the features are pale, coarse, and bloated, the eyes puffy, the lips thick and the tongue large and broad. The build is of the usual thick-set, short-necked, bloated form, the abdomen being prominent. The hands and fingers are broad. The hair is sparse and dry and top of head flat; and in the back is the lumbar cushion commonly seen. No thyroid tumour is present. The child is lethargic and takes no interest in its surroundings or its food. A particularly large umbilical hernia is present, the hernial ring admitting one's thumb with ease.

The child is shown because she exhibits two features which are characteristic of Mongolian imbecility rather than of cretinism: (1) Markedly incurved little fingers; (2) congenital morbus cordis. A definite systolic murmur can be heard to the left of the manubrium. It is not accompanied by symptoms. It is open to question whether the murmur may not be ascribed to anæmia, but the wide area over which it is heard and its intensity favour the view that the lesion is organic.

Two Sisters with Deformity of Bones and Splenomegaly.—Dr. LANGMEAD.—Case 1: Girl, aged 6 years 5 months. History: The child began to crawl at the age of five months, according to the mother, and then the legs were noticed to be crooked. She did not attempt to walk until over two years old, and could not walk alone until aged 4 years. She was entirely breast-fed for six months. From six months to nine months she was fed on milk, lime-water, barley-water, and raw meat-juice, and was taking a quart of milk daily. There has been no acute illness. The mother suffers from anæmia, the father is "delicate." A brother died of malnutrition when aged three years. The skeletal changes closely resemble those of rickets. The skull is bossed, the ribs are everted and

beaded, the epiphyses enlarged, especially at the wrists and ankles. The femora are incurved; the tibiæ are prominently bowed forward and inward, the concavity being outwards. Genu valgum is very marked. The shins are very prominent and of "plough-share" form, the anterior borders of the tibiæ being sharp and sinuous. The muscles are everywhere flabby, those of the legs being especially poorly developed. The spleen extends downwards as far as the anterior superior spine of the ilium and fills the left side of the abdomen. The liver reaches downwards for about an inch below the costal margin. Blood examination: Red blood-corpuscles, 3,960,000 (79·2 per cent.); white blood-corpuscles, 12,400; hæmoglobin, 56 per cent.; colour index, 0·7. Differential count: Polymorphonuclear cells, 66 per cent.; small lymphocytes, 9 per cent.; large lymphocytes, 17·5 per cent.; large mononuclear cells, 2 per cent.; eosinophiles, 1·5 per cent.; basophiles, 0; transitional cells, 1 per cent.; myelocytes, 0; myeloblasts, 3 per 100 leucocytes; nucleated red cells, 3 per 200 leucocytes. The red cells vary much in size and in staining properties. There is some granular degeneration of the red cells. The Wassermann reaction is negative.

Case 2: Girl, aged 5 years 4 months. The mother gives an almost precisely similar history as in the case of the elder sister. The bony changes closely resemble those in the first case, but have developed to a less degree. The spleen is also enlarged, but less so, reaching about an inch below the costal margin. The liver is palpable. Blood examination: Red blood-corpuscles, 4,610,000 (92 per cent.); white blood-corpuscles, 16,600; hæmoglobin, 70 per cent.; colour index, 0·76. Differential count: Polymorphonuclear cells, 60 per cent.; small lymphocytes, 18 per cent.; large lymphocytes, 13 per cent.; large mononuclear cells, 2 per cent.; eosinophiles, 4 per cent.; transitional cells, 2 per cent.; myelocytes, 1 per cent.; nucleated red cells, 2 per 100 leucocytes. The red cells vary much in size. The Wassermann reaction is negative.

The points of interest in the cases are:

(1) The diagnosis: the skeletal changes are such as occur in rickets, but they appear to be progressive, for the younger child shows less marked changes of a precisely similar form—such, according to the mother, as the elder child showed at the same age.

(2) The splenomegaly: marked in the more deformed child, less so in the younger one. Rickets alone is not generally acknowledged to cause splenic enlargement. Even if rickets be held to be the cause, why is the enlargement progressive, seeing that the usual period for active rickets is over?

Radiograms are shown of both cases. The epiphyses appear to be characteristic of rickets. The thickening of the compact bone at the bends and the irregularity of the outline of the medullary canals of the long bones is perhaps unusual. Apart from the splenomegaly the cases appear to correspond to those of a form of dwarfism described by Hutinel, Tixier and Roederer.

Case of (?) Cerebellar Encephalitis.—Dr. E. BELLINGHAM SMITH.—Boy, aged 8 years, was admitted into the Queen's Hospital for Children on July the 26th, 1913, as a case of cerebro-spinal meningitis. The history states that on July the 25th the boy was suddenly taken ill with headache, vomiting and pains all over the body. On admission on the following day the boy was drowsy, the face was flushed, there was distinct rigidity of the neck muscles and some retraction of the head. The abdomen was retracted, all the reflexes were exaggerated, and the plantar reflexes were extensor in

character. Kernig's sign and ankle-clonus were well marked. The temperature was 103° F., and the pulse varied from 68 to 88. Lumbar puncture, performed the day after admission, revealed a turbid fluid, not under pressure, containing 0·075 per cent. albumin; globulin, a small precipitate. Glucose present, and a great number of polynuclear cells and large lymphocytes. No organisms were seen and the cultures were sterile.

On July the 29th his condition was unchanged except that plantar reflexes were flexor and the heart very irregular.

On August the 8th there was some commencing optic neuritis, and the head-retraction had disappeared. Temperature was still raised and the pulse rapid and regular.

On August the 17th the child was still rather drowsy, and condition still unaltered. Blood-count and blood-cultures were respectively normal and sterile. Widal was negative.

On August the 19th the child could answer questions and complained of headache.

On August the 21st the optic neuritis was well marked.

On September the 4th lumbar puncture gave a turbid fluid: albumin, 0·35 per cent.; globulin, thick precipitate; glucose absent. In the films a moderate number of polynuclear leucocytes. Culture sterile.

On September the 9th the temperature was still raised; the child was very wasted, and complained very much of headache, but his condition permitted of a more thorough examination. The reflexes were exceedingly brisk throughout, and equal on both sides of the body. Plantar reflex, flexor; ankle-clonus well marked. There was no paresis of limbs, but on getting him to move his arms or legs there was some ataxia. This inco-ordination was equally marked on both sides of body. There was no facial or eye paralysis and no nystagmus, and no alteration in sensation. Hearing was indifferent on both sides, but the right hearing was distinctly more imperfect than the left. Optic neuritis present and more marked on the right than on the left. On getting the child to sit up, he did so with difficulty and a swaying movement; on being stretched his head assumed an attitude with face turned upwards and to the left and right ear down to right shoulder.

September the 10th: Patient was given phenazone bromide and liq. trinitrine for headaches, which were very severe, but with no improvement. General condition getting steadily worse.

On September the 15th pot. iodide in 5-gr. doses was given *t.i.d.*, and on September the 20th the temperature, which had hitherto been continuously raised, suddenly became normal. Similarly, his headaches, after a slight attack on September the 18th, were no longer complained of.

On October the 3rd he could walk, but with a tendency to lurch to the right. There was slight ankle-clonus to be obtained on the left side, otherwise reflexes were normal.

On October the 9th the optic neuritis was less marked, the child could run about the ward and seemed quite well, and is now rapidly gaining weight.

The interesting feature in this case is the almost immediate relief of all symptoms shortly after the administration of iodides.

Case of Infantile Paralysis of Early Onset, with Unusual Deformities.—Dr. E. BELLINGHAM SMITH.—Male, aged 1½ years, brought to the Queen's Hospital for Children on September the 3rd for paralysis of

both legs and left arm. The mother states that the child was quite well until two months old, when he was vaccinated. A few days later the child seemed very unwell and was unable to move the left arm or either leg. Ten days later the child was taken to the Evelina Hospital. He has since been to other hospitals, but the condition has not improved.

The child is fairly well nourished but is quite unable to sit up, and usually lies with both legs flexed at knee and markedly abducted at the hip-joint, so that the thighs lie at right angles to the pelvis. The left leg can be readily brought down into a direct line with the trunk, but the right is incapable of complete inward rotation and adduction. The knee-jerks are absent on both sides. The plantar reflex is absent on the left and extensor (infantile type) on the right. The abdominal reflexes are sluggish on the right, absent on the left. The paralysis of the muscles of the left lower limb appears to be fairly general throughout. In the right leg the affection appears limited to the adductors and extensors in thigh and most of the muscles in the leg. Electrically the muscles of the right leg are said to react normally, while those on the left side show a marked diminution to both galvanism and faradism with A.C.C. > K.C.C. In the left upper extremity there is some wasting of the biceps and triceps group and a diminution in response to both faradism and galvanism.

X-ray plates of the limbs of this child show a dislocation or subluxation of the left hip-joint, not congenital in origin, an old green-stick fracture of the lower end of the left femur, and a curious swelling of the shaft of right femur, just below the great trochanter. Throughout the limbs a tendency for most of the bones to show a cystic structure.

The following specimens were shown :

Neoplasm of Sigmoid Flexure.—Dr. J. PORTER PARKINSON.—The specimen comes from a boy, aged 5 years, who was healthy till whooping-cough four months ago. One brother and the maternal grandfather died of consumption. In the middle of June he began to complain of abdominal pain and tenderness, coming on in attacks and lasting two to three days, accompanied by slight diarrhoea.

He was admitted to hospital on July the 17th, and was then healthy looking and well nourished. The abdomen was slightly prominent and tender on palpation. No evidence of fluid. In the right lumbar iliac region was a moderately distinct mass the size of an orange and rounded, very movable, and tender on palpation. Percussion note over it was slightly impaired. Nothing else abnormal could be made out in the abdomen or elsewhere. The stools were normal. Temperature slightly raised, as a rule to 99° 6' F., but occasionally rising to 101° without obvious reason; on September the 10th the temperature rose to 104° and the child was obviously worse, the abdomen more tender and distended with flatus. The temperature then rose daily to 103°, and on September the 29th, after several motions containing large quantities of blood, the child died. During the two months in hospital the child lost 3 lb. in weight.

At the necropsy the abdominal lump was found to be a distended sigmoid colon lying in the right iliac fossa and adherent to the adjacent small intestine. The walls of the sigmoid were much thickened with hard, whitish growth, the inner surface being ulcerated and no trace of mucous membrane visible. The walls measured about $\frac{1}{3}$ in. in thickness. The external surface was smooth. There was no constriction of the gut. All the other organs were

normal. A microscopical section of the wall of the sigmoid shows largish, rounded and tailed cells packed in the meshes of fibrous tissue alveoli. In some parts this is replaced by a granular, structureless, apparently colloid substance taking the stain badly. Dr. Parkinson regarded it as a carcinoma.

Diphtheria of Trachea and Bronchi.—Dr. J. D. ROLLESTON.—Girl, aged 5 years, was admitted to hospital on June the 20th, 1913, with severe faucial and laryngeal diphtheria on fourth day of disease. Tracheotomy performed on admission. Some relief followed operation, but the tube remained dry. The respirations were between 48 and 62, and pulse between 130 and 150; temperature, 102° to 101° F. There were numerous small stools. Death took place somewhat suddenly on June the 22nd.

Specimen shows membrane closely adherent to the posterior surface of the epiglottis and interior of the larynx, from the lower end of which a thick continuous tubular cast extends to the bifurcation of the trachea and passes into each of the bronchi.

Skiagram of a Case of Anomalous Development.—Dr. F. G. CROOKSHANK.—A female infant was born on August the 17th, 1913, of healthy parents who have had previous offspring free from all congenital defect. The lower part of the dorsal spine was protuberant, and it was thought that a spina bifida was present. The infant was seen by Dr. Crookshank when a fortnight old, and it was then obvious that there was a grave defect of what should have been the spinal column in the lumbar region. The lower limbs were small, immobile, and presented webbing between the thigh and the calf. A skiagram showed absence of the lumbar vertebræ, and a very imperfect condition of the pelvis. The infant was admitted into the Belgrave Hospital, where she died on October the 1st, 1913. The legs had not grown since birth, although the rest of the body was in fair proportion.

At the post-mortem examination it was found that the spinal column terminated at the twelfth dorsal vertebra in a bony boss of small size. The spinal canal was completely closed. There were twelve pairs of dorsal nerves but no lumbar nerves at all; and the legs were, seemingly, not innervated. A very rudimentary sacrum and coccyx were present, though the only trace of a lumbar spine was represented by the continuity between thorax and pelvis of a fibrous band apparently indicating the anterior vertebral ligament. No other abnormality was found.

It is beyond dispute that the child's mother had been, for several months before and after conception, in close daily association with a little boy, paralysed as the result of Pott's disease, who died when the mother was four months pregnant. She and this little boy are stated to have been greatly attached to each other.

Some references to cases of anomaly of the vertebral column may be found in the 'Revue d'Orthopédie,' July the 1st, 1912, and 'La Presse médicale' for October the 5th, 1912.

Extra-pleural Lipoma from a Child, aged 6 years.—Mr. DUNCAN C. L. FITZWILLIAMS.—This child was shown to the Section on January the 24th, 1913, as a case of lymphangioma, resembling a hernia of the lung. The general opinion expressed at the meeting was that the condition was a true hernia of the lung. A truss was devised, which the child wore for some months. The swelling gradually became larger, and in September the child was operated upon and the lump exposed. It proved to be a pure lipoma

with very little fibrous tissue. The portion in the neck communicated by a narrow neck growing down behind the subclavian artery with a much larger portion which lay within the thorax outside the parietal pleura. The tumour was extremely soft, practically fluid oil at the body; temperature and coughing easily impelled most of the intra-thoracic portion into the neck. The tumour was removed whole.

Philadelphia Pediatric Society.

October the 14th, 1913, THEODORE LE BOUTILLIER, M.D., President.

Child with Cerebellar Gait.—Dr. WILLIAM DRAYTON, jun., showed this girl, aged 5 years, of Russian-Jewish parents, who came to the Orthopaedic Hospital on July the 30th for marked difficulty in walking. She had a fall in February, 1912, but was not seriously injured. Two days later she had complained of headache and pain at the back of the knees, was chilly and had a little fever, but seemed well next day. Since this time her hands "shook" and she has dropped things. Then she began to stagger and fall. Her pain in the legs is worse in damp weather. Examination shows only that her right arm is weaker than her left; doubtful ataxia of arms; staggering, ataxic gait. Wassermann reaction negative August the 3rd and October the 2nd, 1913. Upon mercurial inunctions and sodium iodide for a month, she has gained 5 lb. and is able to walk alone. Her gait has become somewhat spastic now. Dr. Drayton considers that she has either cerebellar syphilis or a cerebellar cyst, resulting from the fall.

The parents and four other children were living and well. No Wassermann reaction had been attempted in the father.

Conference of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy.—Dr. J. TORRANCE RUGH gave some impressions of this Conference. He said that delegates were present from the British Isles, Canada, United States, Australia, New Zealand, and India. Meetings were well attended and were marked by an unusual degree of enthusiasm. The geographical distribution of the papers and the reports of work done and in contemplation indicated that Great Britain is not so far advanced in this work as are other English-speaking countries, and was seeking light from the experiences of the others. The inaugural address of John Burns, M.P., was a masterful plea for the education of the growing girl in matters pertaining to motherhood, in the preparation for motherhood and in the care of the child. He also pleaded for public interest in child welfare, and paid his respects in strong terms to those "misguided women who thought more of politics and pups than of homes and healthy heirs." Papers were read before an administrative and a medical section in the form of symposia. The subjects of the symposia in the former section were "The Responsibility of Central and Social Authorities in the Matter of Infant and Child Hygiene," and "The Administrative Control of the Milk Supply." In the Medical Section were considered "The Necessity for Special Education in Infant Hygiene," "Medical Milk Problems," and "Antenatal Hygiene." All the papers

were terse, forceful and practical. The papers by Dr. F. Truby King on "The New Zealand Scheme for Promoting the Health of Women and Children," by Dr. Caroline Hodger on "The Relation of the Education of the Girl to Infant Mortality," and by Miss Gregory on "The Improved Training of Midwives as Influencing Infant Mortality," were especially good. That by Dr. Hodger, of Chicago, was one of the most practical presented and elicited extensive discussion as well as merited commendation. Because of the lack of supervision of the milk supply, many English pædiatrists use dry milks; papers by Drs. Eric Pritchard and A. E. Naish strongly advocated milk powder as economic, sterile and efficient. That prepared by the Bévenot-de-Neveu method was considered best. Dr. Frederick Langmead recorded successful results from citrated whole milk. In his excellent paper upon "Congenital Syphilis as a Cause of Infant Mortality and the Preventive Measures Necessary," Dr. F. W. Mott laid stress upon the control of communicable diseases by reporting to the Board of Health. He advocated salvarsan and neo-salvarsan as the best remedies. There is no doubt of the value of such a conference, and it is to be regretted that the difficulty of language prevents the participation of France and Germany, since their work in this field would doubtless add much more to our working knowledge of these great problems, of such profound interest to nations and countries.

Société de Pédiatrie, Paris.

October the 14th, 1913. (Bulletin No. 8.)

Transitory Severe Uræmia in the Course of Acute Nephritis.—MM. NOBÉCOURT, MILHIT and BIDOT reported the case of a girl, aged 7½ years, who did not completely recover from a second attack of nephritis, the urine after two months being still albuminous and containing blood. The interest of the case lay in the severe uræmia—the amount of urea rising on the seventh day to 4·57 gr. per litre in the cerebro-spinal fluid, and on the eighth day to 6·17 gr. in the blood-serum.

Craniectomy in Cerebral Tumour.—MM. GUINON, DE MARTEL and RIPART showed a girl who at the age of 12 years was seized with disturbances of vision—dilated pupils and partial blindness. Recovery ensued after craniectomy in the right subtemporal region.

Symmetrical Plantar Lipomata.—MM. VARIOT and L. MONOD showed a case aged 18 months.

Epididymitis and Old Hemiplegia.—M. MALAETE showed a boy, aged 6½ years, with old hemiplegic and muscular atrophy. The right testicle was enlarged and lobulated, the epididymis forming a separate mass. It was hard and insensitive. Wassermann negative. Diagnosis: poliomyelitis and tubercle.

Abnormal Symptoms of Appendicitis in an Infant of two years.—Mme. NAGEOTTE-WILBOUCHEWITCH showed a girl of 2 years operated on

after irregular attacks of pain lasting for a period of ten days. The appendix was normal except for the presence of a small foreign body.

MM. GUINON and SAVARIAUD thought the symptoms due to neurasthenia.

Congenital Hydronephrosis.—M. L. D'ASTROS reported a case in a boy, aged 7 years, which was interesting on account of the large size of the pelvis, which contained about nine litres. The ureter was of normal calibre.

Retention of Urine in Acute Infantile Paralysis.—MM. SCHREIBER and D'ALLAINES reported the case of a boy, aged $9\frac{1}{2}$ months, who had, in addition to this symptom, hyperæsthesia, profuse sweating, constipation and flaccid paralysis.

Radiography and Radiotherapy in Mediastinal Adenopathy.—MM. RIBADEAU-DUMAS and ALBERT-WEIL reported the case of a child, aged 5 months, brought to the hospital on account of attacks of dyspnoea. After six applications of X rays, lasting on an average ten minutes, the child was discharged cured.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Diphtheria in the Metropolitan Asylums Board Hospitals ('*M. A. B. Rep.*,' 1912).—4844 cases were admitted in 1912 as compared with 5034 during 1911 (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 28). Exclusive of purely bacteriological cases the percentage mortality was 6·8, the lowest on record, and 2·6 below the average rate for the past ten years. Diphtheria is usually more fatal to males than females, but in 1912 out of 19 females under one year 12 died, a percentage of 63·2, whereas out of 38 males of the same age 11 died—a percentage of 28·9. The total percentage mortality for males was 7·1, and for females 6·8. On 234 cases tracheotomy, on 45 intubation, and on 27 both operations were performed, among whom there were 53, 3, and 11 deaths respectively. The percentage error in cases admitted was 12·9. Among the 775 wrongly certified as diphtheria were 464 of tonsillitis, 43 of Vincent's angina, 96 of laryngitis, and 14 of broncho-pneumonia. Twenty-eight had no obvious disease or were not diagnosed. Paralysis occurred in 9·38 per cent., albuminuria in 24·4 per cent., otitis in 4·6 per cent., serum rashes in 30·19 per cent., joint pains in 3·9 per cent., and abscesses at the injection site in 0·76 per cent. 184, or 3·57 per cent., contracted scarlet fever; 54, or 1·05 per cent., chickenpox; and 44, or ·85 per cent., measles.

J. D. ROLLESTON.

Diphtheritic hemiplegia ('*Zeitschr. f. Kinderheilk.*,' 1913, VIII, p. 88).—W. H. Leede records four cases which occurred among 6300 diphtheria admissions to the Hamburg-Eppendorf Hospital between October, 1909, and January, 1913. Two occurred in men, aged 24 and 18 years respectively, and the following in children: (1) Girl, aged 8 years. Left hemiplegia on twenty-fifth day; cardiac dilatation, enlargement of liver, and albuminuria. Recovery with spastic paresis and athetosis. (2) Boy, aged 3 years. Right

hemiplegia with aphasia on twenty-third day. Death from bronchopneumonia on forty-sixth day. Necropsy showed softening of left corpus striatum, optic thalamus, and subthalamic region. The paper contains a review of sixty-three cases from the literature.

J. D. ROLLESTON.

Scarlet fever in the Metropolitan Asylums Board Hospitals ('*M.A.B. Rep.*,' 1912).—9883 cases were admitted in 1912 as compared with 8818 in 1911 (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 30).—The mortality was 1.5 per cent. The percentage error of diagnosis was 6.4. Among the 672 wrongly certified as scarlet fever were 34 of German measles, 25 of chickenpox, 143 of tonsillitis, and 169 of erythema. 104 had no obvious disease or were not diagnosed. The commonest complications were otitis (9.22 per cent.), albuminuria (6.8 per cent.), secondary adenitis (4.28 per cent.), nephritis (2.7 per cent.), and rheumatism (2.33 per cent.). 307, or 3.07 per cent., had relapses; 131, or 1.33 per cent., contracted diphtheria; 197, or 2.01, chickenpox; and 98, or 1.0 per cent., measles.

J. D. ROLLESTON.

Attempts to infect monkeys with scarlet fever ('*Prag. med. Woch.*,' 1913, xxxviii, p. 233).—**Schleissner** has tried vaccinating twenty-two monkeys with 24-hour cultures of scarlatinal streptococcus. The bouillon culture was sprayed into the nostrils and on to the tonsils. There were nine positive results; fever, sore throat and rash followed, four weeks later, by desquamation of the palms and soles. If the results are confirmed he says it must be recognised that scarlatinal streptococcus is the causal agent in scarlet fever.

M. D. EDER.

Value of the so-called inclusion-bodies in scarlet fever ('*Arch. of Ped.*,' 1913, xxx, p. 346).—**M. Nicoll, jun.**, has examined about 400 cases of scarlet fever usually during the acute stage, and comes to the following conclusions: The finding of typical inclusion-bodies in a case resembling scarlet fever before the fourth day may mean scarlet fever, sepsis, or severe streptococcal angina. Negative findings practically exclude scarlet fever. In diphtheria treated with antitoxin, positive findings before the seventh day are not diagnostic of scarlet fever. After that time a positive result in the case of a scarlatiniform rash is very suggestive of scarlet fever.

J. D. ROLLESTON.

Does a familial disposition for scarlet fever and its complications exist? ('*Jahrb. f. Kinderheilk.*,' 1913, lxxviii, *Erg.-Heft.*, p. 116).—**A. Mathies** comes to the following conclusions as the result of his study of 3000 cases of scarlet fever, which included 215 scarlet fever families with 519 members: (1) A familial disposition for scarlet fever does not exist. (2) The fact of belonging to a given family does not determine a similar course of the disease in the members of that family. (3) As regards the streptococcal complications of scarlet fever (adenitis and otitis media) an accumulation of cases in the family may be found, but not a familial disposition. (4) As regards the complications due to the primary agent of scarlet fever (unexplained fever, joint and heart affections, and nephritis) a familial disposition exists. (5) There is also a familial disposition for relapses in scarlet fever both in their fully developed form and in their rudimentary form as angina.

J. D. ROLLESTON.

Prodromal urticarial rash of scarlet fever and measles in the same child (*Arch. de méd. des enf.*, 1913, xvi, p. 447).—**P. Galli** regards accidental rashes in measles, varicella, and scarlet fever as due to a toxic cause associated with a special condition of the subject innate or acquired. According to him the individual factor plays the most important part in their genesis. A boy, aged 4 years, developed a general urticarial rash. Thirty-six hours later it began to fade, but the temperature rose, and on the third day the characteristic eruption and angina of scarlet fever occurred. The disease then ran its course in the ordinary way. Three years later the boy had another generalised eruption of urticaria. The next day the rash faded and the catarrhal signs of measles appeared followed by the typical eruption.

J. D. ROLLESTON.

The relation of the diet to the course, blood findings and nephritis in scarlet fever (*Monatsschr. f. Kinderheilk.*, 1913, xii, p. 121).—**J. R. Gerstley**.—Of 306 cases of scarlet fever, one half were kept on a milk diet and the other on an ordinary full diet. Forty cases of nephritis developed, of which 21 occurred among those on the milk diet and 19 in those on full diet. Gerstley's results thus agree with those of Pospischill and Weiss (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, viii, p. 240), who found that scarlatinal nephritis did not depend upon the character of the diet. Like them, too, he found that the children on meat diet appeared in much better health than those on milk diet. Meat diet appeared to have a good influence upon the blood, especially as regards the number of the red corpuscles.

J. D. ROLLESTON.

Scarlet fever without eruption or desquamation (*Norsk Mag. f. Lægevid.*, 1913, lxxiv, p. 1076).—**O. Lorange** records a case in a girl, aged 15 years, in whom the diagnosis of scarlet fever was based on the initial symptoms, fever, characteristic tongue, throat and enlarged glands, and the simultaneous occurrence of four other cases of undoubted scarlet fever in the same family. The diagnosis was strengthened by her spending seven weeks in a scarlet fever ward without becoming infected.

J. D. ROLLESTON.

Return cases of scarlet fever (*Arch. of Ped.*, 1913, xxx, p. 360).—**L. A. Sexton**.—During the last sixteen years there have been sixteen return cases traceable to some member of the family that has been discharged from the scarlet fever hospital. In every case the discharged patient was found to have rhinorrhœa. In only two cases was desquamation present, in both of a slight character and confined to the soles. In two cases a virulent and fatal type of the disease was contracted from a correspondingly mild case.

J. D. ROLLESTON.

Return cases of scarlatina (*Dub. Journ. Med. Sci.*, 1913, i, p. 329).—**J. M. Day** discusses the vexed question of return cases of scarlatina, and gives the procedure adopted by him. No attention is paid to peeling, but the condition of the nose, throat and ears is relied on. As long as there is any redness of the throat, or nasal discharge, a child is not safe to be discharged. If the tonsils be enlarged they are removed, and, if the parents object, the responsibility of guaranteeing freedom from infection is declined. On discharge, the child should be isolated for a week from other children, and, if this cannot be carried out, the child is placed in a separate non-

infectious ward for that period. As regards otorrhœa, which may become chronic, the children are detained in hospital at least two months, during which time careful antiseptic treatment is carried out. In cases which do not cease within that time, the children are kept in hospital longer if the parents will permit, and at the same time they are removed out of the infectious wards.

J. ALLAN.

Measles in the Metropolitan Asylums Board hospitals ('*M. A. B. Rep.*,' 1912).—4314 cases were admitted in 1912 as compared with 1537 in 1911, which was the first year in which measles was admissible to these hospitals (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 32). The mortality was 10·45 per cent. Among 135 wrongly certified were 26 of German measles, 30 of erythema, and 19 with no obvious disease. The commonest complications were broncho-pneumonia (14·25 per cent.), otitis (11·05 per cent.), conjunctivitis (3·13 per cent.), enteritis (2·59 per cent.), and abscesses (2·07 per cent.). Ninety-one cases (2·41 per cent.) contracted whooping-cough, 69 (1·83 per cent.) scarlet fever, and 67 (1·77 per cent.) diphtheria.

J. D. ROLLESTON.

Analysis of a thousand cases of epidemic measles ('*Am. Journ. Dis. Child.*,' 1913, vi, p. 122).—C. U. Craster.—The cases occurred among emigrant children treated at the Hoffmann Island Isolation Hospital during nine months of 1910–11. The greatest number (196) occurred in June. The third year age-period showed the greatest incidence (195). The largest complication percentage (81·3) and case mortality (34·3) were found in the first year. The seasonal prevalence of complications was highest in December (78·6 per cent.), and of case mortality in January (25·2 per cent.). The most frequent complication was otitis media (495). The most common cause of death was broncho-pneumonia and enteritis—23·3 per cent. of total deaths. The average duration of the fever was four days.

J. D. ROLLESTON.

Chickenpox during intra-uterine life ('*Brit. Med. Journ.*,' 1913, i, p. 1054).—F. C. Pridham reports a case of varicella in a newborn infant. There had been chickenpox in the house within a fortnight of the birth of the infant.

J. ALLAN.

Cutaneous complications of varicella before and after the use of sterilised linen ('*Thèses de Lyon*,' 1911–12, No. 46).—M. Caplan found that the use of sterilised linen diminished very considerably the occurrence of skin complication in varicella. Before the adoption of this method thirteen out of twenty-four cases of varicella developed skin complications, whereas after its employment only four out of twenty-four were similarly affected.

J. D. ROLLESTON.

Whooping-cough in the Metropolitan Asylums Board Hospitals ('*M. A. B. Rep.*,' 1912).—1731 cases were admitted in 1912 as compared with 570 in 1911, which was the first year in which whooping-cough was admissible to these hospitals (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 34). The mortality was 8·47 per cent. Among 101 wrongly certified as whooping-cough were 36 cases of bronchitis, 11 of broncho-pneumonia, and 20 with no obvious disease. The commonest complications were broncho-pneumonia (10·43 per cent.), otitis (6·42 per

cent.), stomatitis (2.54 per cent.), convulsions (2.48 per cent.), and albuminuria (2.42 per cent.). Forty-eight cases (2.70 per cent.) contracted scarlet fever, 83 (4.67 per cent.) chickenpox, and 63 (3.55 per cent.) measles.

J. D. ROLLESTON.

The ætiology of pertussis (*Riv. di Clin. Pediat.*, 1913, xi, p. 481).—**P. Porcelli** has made extensive experiments with regard to Bordet and Gengou's bacillus, morphologically, by cultures, agglutination tests, fixation of complement and by experimental injection of animals. He found this bacillus constantly present in the sputum of twenty cases of pertussis examined, in a pure state in the early stages. It was absent in the sputum of all other cases. Out of sixteen cases he obtained marked agglutination up to dilution of $\frac{1}{150}$ — $\frac{1}{200}$ in fifteen, while in fifteen fixation of the complement gave positive results. In guinea-pigs, white mice and rabbits injected he produced changes in the organs. As the result of his researches he considers that the relation between Bordet and Gengou's bacillus and pertussis is sufficiently established.

VINCENT DICKINSON.

Late complications of whooping-cough (*Gaz. des Hôp.*, 1913, LXXXVI, p. 983).—**C. Leclerc**.—There is a general belief that whooping-cough is a benign malady terminating in complete cure, but the author classifies the possible sequelæ as follows: (1) Infective: coryza, laryngitis, bronchitis, broncho-pneumonia, tuberculosis of lungs and bronchial glands. (2) Nervous: asthma, nervous cough. (3) Mechanical: dilatation of bronchi, and pulmonary emphysema. The avoidance of such sequelæ should be obtained by great care in the treatment in the later stages of the disease, and during convalescence the author strongly recommends the waters of Mont-Dore as specially suitable.

J. PORTER PARKINSON.

Hemiplegia in whooping-cough (*Birmingham Med. Rev.*, 1912, xix, p. 295).—**J. E. H. Sawyer** showed a boy, aged 4 years, at the Midland Medical Society suffering from right hemiplegia, which had come on suddenly with loss of consciousness during an attack of whooping-cough one year ago. The face, arm, and leg were involved. The speech had been affected, but was now normal. There were slow athetoid movements of the hands, suggesting that the condition was due to meningeal hæmorrhage.

J. D. ROLLESTON.

A rare complication of typhoid fever in a child (*Monatsschr. f. Kinderheilk.*, 1913, xii, p. 117).—**S. Samelson** records a fatal case of unrecognised and therefore untreated typhoid fever in a boy, aged 2 years. A few days before death signs of laryngeal obstruction arose, and required tracheotomy. Post mortem, in addition to broncho-pneumonia ulcerative laryngitis was found, a portion of both arytenoids being destroyed. Though typhoid ulceration is relatively frequent in adults, varying from 5 to 20 per cent. in various epidemics, in children it is extremely rare.

J. D. ROLLESTON.

The cuti-reaction to tuberculin in acute infections (*Gaz. d. hôp.*, 1913, LXXXVI, p. 1789).—**A. Sézary**.—Previous observers had found that in severe acute infections the cuti-reaction frequently became negative, though it might have been positive before the attack and might become so again in convalescence (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 321). Sézary noted the disappearance of the reaction in typhoid fever, pneumonia, and broncho-pneumonia, and its reappearance in convalescence.

He attributes the disappearance of the reaction to defective sensibility of the skin, doubtless due to functional disturbances of the nervous system. The same applies to the skin of old persons, in whom the cuti-reaction was found to be almost always negative. This hypothesis does not, however, hold good in regard to measles, which even in its mildest forms prevents the reaction appearing, but it would appear that in this disease the anti-bodies are absorbed or neutralised.

J. D. ROLLESTON.

Dermatology and Syphilis.

Mongolian blue sacral patches (*'La Medicina de los Niños,'* 1913, xiv, p. 98).—**Diestro** has, in a few months, collected five instances in Spain of blue patches on the sacral region in Spanish children. In none of the children were there any other signs of Mongolism. One had hereditary syphilis; the others were quite healthy. He believes that a diligent search would show the anomaly to be pretty wide-spread and frequent in Spain. Four of the children were dark or chestnut; one was red-haired. **Bruch** (*'Arch. de Méd. des Enf.,'* 1912, xv, p. 446) has stated that these spots never occur in red-haired children.

M. D. EDER.

Erythema scarlatinoides (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, p. 413).—**L. J. Menville** records the case of a girl, aged 10 years, who, when three months old, was noticed to have a red rash covering the whole body, except the face, the tongue also being red. In a day or two there was a general desquamation with itching. A diagnosis of scarlet fever was made. The patient has had a yearly recurrence of the condition, which shows itself in the later part of the spring. When seen by the writer the body was covered with a red rash (resembling scarlet fever) from the neck down to the toes, the face being exempt. There was an intense itching. Twenty-four hours later there was a general desquamation, beginning on the chest, where the rash always makes its first appearance. The tongue was red, but the throat normal. Temperature 100° F., with headache and a chilly feeling. Urine normal. Blood examination normal. The constitutional symptoms are said to be becoming more severe each year. The patient has never had drug erythema.

T. R. WHIPHAM.

Erythrodermia desquamativa (*'Gazz. di med. chir., etc.,'* 1913, p. 673).—**V. Fragale** describes two cases in breast-fed infants, aged 2 months. One recovered, the other died. The condition, which was first described by C. Leiner in the *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1908, v, p. 244, is produced by intestinal toxins eliminated by the skin, the cutaneous lesions being aggravated by changes in the glands of internal secretion, especially the thyroid, suprarenals and hypophysis. Various degrees of severity may be met with. The lesions may be very superficial and limited to a few parts of the body, as in Fragale's first case, or be deep and disseminated with marked histological lesions of the dermis, as in his second case. Erythrodermia differs from the dermatitis exfoliativa described by Ritter as follows: (1) There is no seborrhœa or fine-scaled desquamation in Ritter's disease. (2) The layers subjacent to those desquamated are not moist and reddened, and vesicles and exudation are absent in erythrodermia. (3) The prognosis is good in Leiner's disease, and almost always fatal in Ritter's. (4) The histological changes in erythrodermia are only a small-celled infiltration of the various layers, keratinisation, dilatation of the vessels of the dermal papillæ, and leucocytic infiltration of the vessels. In

Ritter's disease, on the other hand, there is degeneration and necrosis of the cells of the various layers of the cutis. Differentiation from eczema, impetigo, and pemphigus is easily made.

J. D. ROLLESTON.

Dermatitis gangrænosa infantum (*'Brit. Journ. Derm.'* 1913, xxv, p. 227).—A. H. H. Howard records a fatal case in a twin girl, aged 10 months, the subject of rickets, and living in bad hygienic surroundings. She had recently had measles when she developed chickenpox. Gangrenous areas developed on the cheek, neck, thighs, and buttocks. The temperature was 104° F., and there were marked wasting and offensive diarrhœa. No bacteriological examination was made.

J. D. ROLLESTON.

Infantile eczema (*'Semana Medica,'* 1912, xix, p. 1360).—Variot treats eczema in nursing infants by changing the milk. It suffices sometimes to give the infant "fresh aseptic milk" alternately with the breast. In other cases he believes that the mothers' milk is almost toxic and must be abandoned. "Chemical analysis is unable to record the cause of these extraordinary perturbations." He believes that changing the milk is much less dangerous than the use of certain local applications.

M. D. EDER.

Purpura, urticaria and angio-neurotic œdema of the hands and feet in a nursing baby (*'Journ. Amer. Med. Assoc.,'* 1913, lxi, p. 18).—

I. M. Snow reports the case of a male infant, aged 6 months, who was strong and fat and was nursed by a healthy mother. One day a dark, brawny swelling appeared, first in the left foot and then in the right foot. The child seemed ill and cried from pain in his feet. A few hours later a dark red œdema involved the scrotum, and an erythema developed on the thighs and buttocks. The baby was given two doses of castor oil, 15 c.c. each, also an enema, which caused a normal stool. On the second day, in addition to the œdema of the feet and genitals both eyes were closed by an effusion into the lids. The child was in continual misery from the tender ankles and refused to nurse. Fifteen c.c. of castor oil produced three light-coloured stools containing mucus and a minute reddish flake, possibly blood. On the third day the rectal temperature was 100·5° F.; abdomen, heart and lungs normal. The puffiness in the eyelids had lessened. Both ears were swollen with a dark red erythema. There was an ecchymosis the size of a half dollar in each cheek. The scrotum was almost of a normal size and colour. On the back, buttocks and posterior portion of the thigh were numerous dark infiltrated hæmorrhagic areas the size of a quarter of a dollar. Both legs were thickly sprinkled with large red papules about 3 mm. in diameter: these evidently itched. Both feet and ankles were greatly swollen and very painful. Here the skin was of a normal colour. No abdominal pain or tenderness could be elicited. The urine was scanty and could not be procured. On the fourth day the baby refused the breast, and was in great distress unless quieted with heroin. The œdema in the eyelids and ears was hardly noticeable. As a result of a pin-scratch a broad, dark ecchymosis 7·5 cm. by 0·5 cm. had appeared on the anterior surface of the right thigh. The purpura of the cheeks, back, buttocks and thighs was unchanged. More papules had developed on the legs. Feet and ankles showed no change. Both hands had commenced to swell, the right first. On the fifth day the baby was asleep from heroin. The most prominent symptom was an enormous swelling of both hands and wrists, which had increased so rapidly that the wristbands of the sleeves had to be cut off,

leaving a livid constriction in the flesh. All joints in the fingers, hands and wrists were freely movable, but manipulation seemed very distressing. The swelling of the right hand was hard and dark; the colour did not change on pressure. In the left hand the oedema was equally firm but of a lighter red, which disappeared on pressure. Both legs were covered with urticarial wheals, some of which quickly became hæmorrhagic. Mixed with the wheals, but fewer in number, were small petechiæ. On the seventh day the brawny swelling of the hands, which had lasted two days, disappeared. There was no pain in moving either hands or feet. The purpura of the cheeks, back and buttocks was fading; there were new hæmorrhagic papules on the legs. The baby was obstinately constipated, probably from opium. It would nurse only after the bowels had moved; there were four laxative stools, large and foul-smelling; there was no blood in them. On the tenth day the baby was very comfortable, sleeping and nursing well; defæcation and urination in order. The only relics of the illness were faint stains on the site of the old hæmorrhages and a fine papular skin infiltration on the legs. The child's general condition has remained good, and there has been no recurrence of the skin lesions. This illness ran its course without fever; no urinary or blood examination could be made. It is practically certain that no serious hæmorrhagic nephritis was present, as the diapers were not stained by the urine. The writer is unable to suggest any explanation of the child's illness.

T. R. WHIPHAM.

Papulo-necrotic tuberculides in infants (*Am. Journ. Dis. Child.*, 1913, v, p. 447).—**B. M. Wronker** describes nine cases in which the diagnosis was first made of infantile tuberculosis by finding papulo-necrotic tuberculides. He considers these lesions are absolutely characteristic and are of extreme diagnostic importance. The majority of cases in infants are indicative of general military tuberculosis. The prognosis is generally bad, but not always fatal. A negative von Pirquet must not be allowed to mislead one in the presence of papulo-necrotic tuberculides.

F. R. B. ATKINSON.

The nascent iodine treatment of lupus nasi (*Brit. Med. Journ.*, 1913, i, p. 767).—**P. W. Bedford** gives the clinical history of a girl, aged 12 years, who suffered from lupus of the nose, and who also had tuberculous kyphosis and scoliosis, and at one time had had a tuberculous ulcer on the wrist which was cured by tuberculin. The nasal condition was not affected by the tuberculin treatment. A solution consisting of 1 pint of a 3 per cent. solution of 10 volumes hydrogen peroxide, to which had been added 1 oz. of acetic acid (B.P.), was applied hourly to the nose. A nasal spray was also employed, to make certain of attacking that portion of the disease that lay within the nasal cavity. This local treatment, combined with tuberculin therapy, effected a cure.

J. ALLAN.

Creeping eruption (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 247).—**G. L. Rudell** says that creeping eruption is a very rare disease, and the recovery of the larva which produces it is even rarer still. He reports two cases, one of which was a farmer's boy, aged 13 years, who had an eruption on his face extending from his forehead downwards in two serpiginous lines. The condition started as an inflamed spot above the left eye and in five days had extended to the chin. From the lower extremity of each burrow the larva was extracted. Illustrations are given, but the larvæ are not named.

T. R. WHIPHAM.

Herpes zoster by contagion (*'Bull. Soc. de Péd. de Paris,'* 1913, xv, p. 200).—**J. Galippe**.—A boy, aged 15 years, developed right intercostal herpes in the region of the fourth dorsal nerve. Four or five days later his friend, aged 14 years, who lived in the same house and saw him daily, developed herpes in the area of the second and third cervical nerves on the right side. There was no family history of tuberculosis, but the fathers of both children were alcoholic (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, ix, p. 360.)

J. D. ROLLESTON.

Lymphangioma circumscriptum (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, p. 333).—**P. E. Bechet** reports a case of this comparatively rare dermatosis in a girl, aged 13 years. The disease began when she was three years old on the upper part of the thigh, first as a reddish inflamed patch on which in a very short time vesicles appeared. The lesion slowly increased in size until four or five years ago; since then it has remained stationary. The only symptom is a burning and itching sensation occasionally during an attack of indigestion. The patch is about 4 by 5 in. in diameter and consists of an aggregation of pearly vesicles of translucent aspect. In a number of the older lesions the translucency is lost and a slight verrucous appearance assumed. Many of the lesions are of a purplish or blackish colour owing to the rupture of minute capillaries and the admixture of blood with the lymph contents of the vesicles. The vesicles themselves are firm, thick-walled and difficult to rupture, being covered by the entire epidermic layer. One or two nœvoid nodules are scattered throughout the mass and some areas of pigmentation can be observed.

T. R. WHIPHAM.

Identical congenital malformations in syphilitic twins (*'Journ. de Méd. de Bordeaux,'* 1913, LXXXIV, p. 559).—**Lefour and Balard** report the case of a woman with recent syphilis who gave birth to male twins, each of which presented identical malformations—lumbar spina bifida, hydrocephalus, and talipes equino-varus of the right foot. The twins were uniovular with a single chorion. The mother was infected with syphilis about three months before she became pregnant. There was no former history of syphilis in either parent, and there were two healthy children, aged 14 and 2 years. The Wassermann reaction was positive in the mother but negative in the infants. The mother had no secondary symptoms during pregnancy. The authors attribute the malformations to syphilis, but remark that such lesions are usually of a quaternary nature and are rare in recent infection. They point out that the Wassermann reaction is often negative shortly after birth, but becomes positive later on.

C. F. MARSHALL.

Lange's colloidal gold chloride test on the cerebro-spinal fluid in congenital syphilis (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, p. 13).—**C. G. Grulee and A. M. Moody** are of opinion that the precipitation of colloidal gold by the cerebro-spinal fluid is a confirmatory aid of much value in the diagnosis of cases of congenital syphilis. Details of the test are given together with tables of cases in which it has been employed. It would appear that treatment distinctly modifies the reaction, but to a much less degree than that of Wassermann.

T. R. WHIPHAM.

The Wassermann reaction in hereditary syphilis, in congenital deformities, and various other conditions in infancy (*'Am. Journ. Dis. Child.,'* 1913, vi, p. 166).—**L. Emmett Holt**.—Of thirty-one cases of

congenital syphilis thirty gave a positive Wassermann reaction. The negative case was an infant of five months who had been treated regularly with inunctions of mercury for a period of three months. Eight other children who had been treated with mercury but not for a long period nor regularly all gave a positive reaction. Of 178 cases not regarded as syphilitic, 167 gave negative and 11 positive reactions. Twelve of the negative cases came to autopsy, and none showed any lesions suggestive of syphilis. Holt thinks that syphilis does not play an important part in the production of common congenital deformities, since not a single positive reaction was obtained in fifty-six consecutive cases. Of sixty-two cases suffering from malnutrition or marasmus only five gave a positive reaction. Of the remaining fifty-seven nearly one third had very considerable enlargement of the liver or spleen, or both. Holt concludes that syphilis is not a common cause of marasmus.

J. D. ROLLESTON.

Wassermann's reaction and salvarsan in congenital syphilis (*Gazz. d. osp.*, 1913, xxxiv, p. 1032).—**E. Mensi** had Wassermann's reaction performed in seven children whose history and symptoms were suggestive of congenital syphilis, and in three in whom the disease was obviously present. In the former the reaction was constantly negative, and in the latter as constantly positive. Four children, one of whom was a newborn infant, and the rest aged 15 months, 2 years and 6 years respectively, received intra-gluteal injections of salvarsan. Rapid improvement in the skin lesions took place in all, but the newborn child died of bronchopneumonia five days after the injection.

J. D. ROLLESTON.

A study of the Wassermann reaction in a hundred infants (*Am. Journ. Dis. Child.*, 1913, vi, p. 162).—**K. D. Blackfan, S. T. Nicholson and T. W. White** examined the blood of 101 infants. In a group of 68 infants from a foundling hospital, none of whom gave a history or evidence of hereditary syphilis, the reaction was negative in 66, doubtful in 1 and positive in 1. In another group of 33 infants, from St. Louis Children's Hospital, in 2 of whom the family history, and in 1 the family history, past history, and physical evidence were suggestive, the reaction was negative in 32 and positive in 1. The writers remark on the wide difference of their results from those of Churchill (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 44), who found a positive reaction in 39 out of 102 children, and maintain that further studies of larger series of cases are necessary to determine the prevalence of hereditary syphilis in hospital children.

J. D. ROLLESTON.

Different results of the Wassermann reaction in twins (*Ann. de Méd. et Chirurg. Inf.*, 1913, xvii, p. 273).—**Cassoute** found this reaction positive in one child, while it was negative in its twin, aged 21 days. They suggest that the anti-complementary properties of the serum are acquired after birth, as eight days later the reaction was positive in both infants. An absolute value should not be given to the Wassermann reaction in the newborn, and the results should be interpreted by the light of clinical facts.

J. PORTER PARKINSON.

Sydenham's chorea and Wassermann's reaction; injection of salvarsan (*L'Echo méd. du Nord*, 1913, xvii, p. 68).—**Pierret** describes the case of a girl, aged 15½ years, suffering from chorea, chiefly of the left side, with no rheumatic history. Wassermann's reaction was positive. An

ABSTRACTS FROM CURRENT LITERATURE.

intravenous injection of '30 cgr. of "606" was given, and the condition markedly improved. There was no history or sign of syphilis.

F. R. B. ATKINSON.

Syphilitic chorea ('*Münch. med. Woch.*,' 1912, LIX, p. 2102).—**G. Flatau** records a case of an illegitimate male child, bottle-fed, who at the age of 4½ months fell ill with diarrhoea and vomiting followed by symptoms of meningitis. After coma of nine days' duration symptoms of chorea developed, which persisted for five years. Wassermann's reaction in the blood was positive. There was no history of tonsillitis, rheumatism, or heart disease, and the ordinary treatment for chorea entirely failed. No improvement followed two intravenous injections of salvarsan, but a course of mercurial inunction produced considerable improvement, and Wassermann's reaction became negative.

J. D. ROLLESTON.

The luetin reaction in infancy ('*Am. Journ. Dis. Child.*,' 1913, VI, p. 171).—**A. Brown**.—Noguchi, in 1911, using numerous strains of the *Spirochaeta pallida* grown on solid media and then ground in a mortar, produced the substance known as luetin. An intradermal injection of '05 c.c. in trikresol is made in the skin of the upper arm, and a control of ground agar in 0·5 per cent. trikresol is injected in the opposite arm. Within one to two days the luetin injection site shows a red indurated papule, which slowly increases during the following four days, and then subsides, leaving brown desquamating induration. This slowly disappears in a few weeks. Occasionally a pustule is formed. The control shows within eighteen to twenty-four hours a slight erythema round the puncture, which disappears in two days. Of 134 tests made at the Babies' Hospital, New York, 34 were made on syphilitic infants and 100 on controls. All but four of the former gave a positive reaction. Of the latter ninety-six were negative and four positive, in only one of whom Wassermann's reaction was positive. In the negative luetin cases Wassermann's reaction was also negative. The syphilitic patients with a negative luetin reaction were all cases of severe infection, and either the hæmoglobin was very low or the skin was much thickened, so that one could not be certain of a positive reaction. Of fourteen infants in whom the test was repeated after injections of salvarsan, eight became negative in an average period of five weeks after the first injection of salvarsan. In each case the Wassermann reaction corresponded with the luetin test.

J. D. ROLLESTON.

A case of cervical ribs of heredo-syphilitic origin ('*Bull. et mém. Soc. méd. Hôp. de Paris*,' 1913, xxxvi, p. 98).—**E. Gaucher** and **O. Crouzon**.—A woman, aged 29 years, in whom the presence of heredo-syphilis was proved by the presence of interstitial keratitis, deafness, and a positive Wassermann's reaction, was found to have a large cervical rib of the thoracic type on the right, and a small corresponding rib on the left. There were no symptoms attributable to the presence of the ribs.

J. D. ROLLESTON.

Raynaud's disease as a symptom of hereditary syphilis ('*Jahrb. f. Kinderheilk.*,' 1913, LXXVIII, p. 177).—**A. Bosányi** records two cases. In the first the symptoms of Raynaud's disease occurred at the age of 18 months, and were not accompanied by any other sign of syphilis but a positive Wassermann's reaction. The symptoms disappeared after an intramuscular injection of salvarsan, but recurred six months later, disappearing again under the same treatment. Wassermann's reaction was negative in

the interval, but became positive during the relapse. In the second case in which there was no relapse of Raynaud's disease nor of syphilis both diseases appeared together and retroceded simultaneously under salvarsan treatment. In the first case the right hand and both feet were affected in the primary attack, and the left hand as well in the relapse. In the second case both hands and both feet were affected.

J. D. ROLLESTON.

Incidence of inherited syphilis in congenital mental defect (*'Lancet,'* 1913, II, p. 861).—**J. L. Gordon** tested the blood-serum of 400 patients in the asylums of the Metropolitan Asylums Board suffering from various forms of mental defect, and found a positive Wassermann's reaction in 66 cases, or 16.5 per cent. In only 11 of the 66 could stigmata of syphilis be found, and in only 1 was there definite history of syphilis in both parents. On the other hand, as a negative reaction was obtained in cases which showed stigmata of inherited syphilis, the above figures probably under-estimate the full incidence of the infection.

J. D. ROLLESTON.

Salvarsan versus Profeta's law (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, p. 95).—**A. Ravogli** points out that the Wassermann test has destroyed Colles's law. The mother of a syphilitic infant has herself not escaped infection, but is shown to have the disease, it may be in a latent form which will not become evident until later. Likewise Profeta's law that the child of a syphilitic mother acquires a congenital immunity, at all events for a time, no longer holds good, as is shown by the following case. An Italian labourer had syphilis and was treated with injections of grey oil for a time, when he ceased attending. He was subsequently joined by his wife from Italy and infected her in due course. Both were treated with salvarsan, the woman being in the beginning of pregnancy. Later the husband gave a negative Wassermann reaction, but the wife refused to have the test made. The pregnancy ended in a miscarriage, but subsequently she gave birth to a well-developed child, which showed no sign of lues. When the child was a few months old the mother developed mucous patches on the mouth. These were followed by the appearance of a lesion on the baby's chin, enlargement of the submaxillary and cervical glands and a macular syphilide on the child's face, trunk and limbs. In this case a mother who was not cured of syphilis gave birth to a healthy child and subsequently infected him from her mouth. At the time of pregnancy the spirochætes were not able to reach the fetus, who was born healthy, but owing to the mother's neglect of treatment they again became active at a later period. Children are born either infected or healthy. Immunity in syphilis does not exist, and when a child born of a syphilitic mother is not infected, it shows that it has latent syphilis, which sooner or later will manifest itself.

T. R. WHIPHAM.

Reviews.

TRANSACTIONS OF THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS. London: Adlard & Son, 1913. Post free 5s.

THIS Association met in London on August the 4th and 5th, and was opened by the Prime Minister.

The first session was devoted to a consideration of tuberculin treatment,

a general survey of which was given by Dr. H. Mackenzie, who considered amongst other things tuberculin as a diagnostic and as a remedy. He believed that it was rarely necessary to employ the substance as a diagnostic, as he considered that cases of tuberculosis which could not be diagnosed without it were likely to do well under ordinary hygienic treatment. A negative test after three consecutive tests was not absolutely trustworthy. He considered that, on starting treatment, $\frac{1}{10000}$ th to $\frac{1}{100}$ th part of the reaction dose, which, generally speaking, was $\frac{1}{10000}$ th c.cm., was the correct initial dose, as he did not believe in reactions. The dose should never be doubled. Tolerance was not of long duration, and might disappear after a few months. The febrile and active cases were not good subjects for tuberculin. He was uncertain of the value of tuberculin, and considered that there was no certain proof that it by itself would arrest, cure, or improve a larger number of cases than other measures.

Dr. Woodhead discussed at length the use and abuse of tuberculin, and considered that the only safe method was to avoid all but minimal reactions.

Dr. Lydia Rabinowitsch-Kempner discussed the nature, preparation and varieties of tuberculin, and stated that no curative influence had been exercised by it.

Prof. Béraneck discussed his own tuberculin. He believed that fever was not a contra-indication, and suggested the institution of preventive treatment in children in contact with the disease, as he found his tuberculin inoculated into a normal guinea-pig often augmented its resistance to a later inoculation with tuberculosis.

Prof. Sahli condemned the use of tuberculin for diagnostic purposes, and disbelieved in reactions.

Dr. Raw was a great believer in tuberculin in mild doses, the maximum of which should be $\frac{1}{1000}$ mgrm. of dried bacillary substance. He chiefly used Koch's new tuberculin, bovine and human, and believed that more complete immunity resulted from using opposite tuberculins. He drew attention to the importance of being satisfied that there was no suppuration in the body, otherwise the injection might liberate the bacilli from a focus. He generally stopped the tuberculin if three consecutive negative examinations for tubercle bacilli were reported. He also considered the subject of dosage and method of treatment.

Dr. White, of Pittsburg, stated that tuberculin produced no protection against future infection.

Dr. Sutherland considered the use of tuberculin in dispensary practice and his results from the use of various tuberculins at the St. Marylebone Dispensary on 130 patients, but as only thirty-five showed tubercle bacilli in the sputum, the results are not very convincing.

Dr. Bardswell described his results at Midhurst Sanatorium, and as a result of his experience found that the remedy had no appreciable effect in general, but 5 per cent. more patients were discharged free of bacilli than in the years before tuberculin was used. He did not believe in producing reactions.

Sir James Fowler deprecated its use in cases of fever, and did not find it favourably influenced the course of the disease in the majority of cases. He was also strongly opposed to the production of reactions.

Sir StClair Thomson did not find that laryngeal cases were, as a whole, benefited by tuberculin.

Dr. Rist, of Paris, discarded its use in febrile conditions, and did not obtain any success from its employment.

Dr. Rennie described his experiences in Sheffield, where the results were favourable.

Dr. Amrein, of Arosa, drew attention, amongst other things, to iron-tuberculin, from the use of which he has obtained excellent results. The high-altitude treatment with tuberculin produced 62.06 per cent. positive results.

An appendix, consisting of a report from various foreign authorities, was presented, some of whom obtained excellent results from its use, and others found it of little or no value.

On the second day of the Conference, which was devoted to the consideration of the need for the co-ordination of anti-tuberculosis measures, the discussion was opened by Sir Robert Philip, and continued by Dr. Biggs, of New York, Dr. White, of Pittsburg, Dr. Rist, of Paris, and others. We would advise all medical men to study the Transactions of the Congress, from which they will derive much valuable information.

F. R. B. A.

CHLORIDE OF LIME IN SANITATION. By ALBERT H. HOOKER, Technical Director, Hooker Electro-Chemical Company, 1913. New York: John Wiley & Sons. London: Chapman & Hall, Ltd.

THE aim of the book is to bring under review the merits of chloride of lime in sanitation. After a brief introductory chapter, in which some notes of historical interest are given and in which the *rationale* of the process is discussed, the author deals with the value of chloride of lime in water purification and sewage disinfection. Among other things, there is a section on the usefulness of chloride of lime in the war against the ubiquitous house-fly. Almost 150 pages are devoted to abstracts from papers germane to this subject, there being no less than 442 references. The book should prove of special interest to those engaged in public health work.

J. A.

THE ADMINISTRATIVE CONTROL OF SMALLPOX. By W. McC. WANKLYN, B.A.Cantab., M.R.C.S., L.R.C.P., D.P.H. London: Longmans, Green & Co., 1913. Price 3s. 6d. net.

The present work is intended as a companion volume to "How to Diagnose Smallpox," which was recently reviewed in this Journal (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 527).

After introductory chapters on the character of epidemics and some points in the natural history of smallpox Dr. Wanklyn discusses the actual details of administration, such as the removal, or, as he picturesquely terms it, the "telephoning away" of the case, inquiry into the source of infection and the date of appearance of the rash, the observation and vaccination of contacts, disinfection, etc. He points out that a smallpox epidemic is always an expensive affair, and that it is the cheapest policy to spare no expense at the outset. An interesting chapter is devoted to a description of the way in which a complicated attack was cut short by the prompt action of the medical officer of health.

Dr. Wanklyn is to be congratulated on having produced another most readable book which should prove a useful guide to all concerned in the administration of public health.

J. D. R.

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THE FOOD REQUIREMENTS OF INFANTS.*

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THE quantity of food required by infants of different ages and of different weights has not only been determined by the direct calorimetric method, but it has also been empirically estimated by the method of the "test-feed."

The calorimeter method is based on the law of the conservation of energy—that is to say, it is assumed that the energy expended in work, heat-production, and other vital activities is equivalent to the potential energy of the food consumed.

An infant confined in the chamber of a calorimeter is to all intents and purposes an animal at rest. So that, although a considerable amount of energy is expended in the internal work of the body—in carrying on the functions of respiration, circulation, and so on—the whole of it is finally converted into heat in overcoming friction or other resistances, and as such can be estimated by calorimetric methods.

We can therefore make a theoretical calculation of the food

* A lecture delivered to post-graduates, National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, January the 13th, 1913.

requirements of the average baby, by estimating the average amount of heat lost by infants of various ages and of various weights when confined in calorimeters, due allowance, of course, being made for the energy consumed in growth, and stored up in the form of new tissues.

Calculations of this kind have been repeatedly made by competent observers, and, although their results vary* very considerably, they all agree in the very important respect that the heat dissipation, or, in other words, that the food requirement, varies directly with the extent of the skin surface of the baby, and not with the weight or age.

Careful measurements of the superficies of infants of different weights have been made, and it is found that the skin area of a baby weighing 5 kgrm. (11 lb.) measures .350 sq. metres ($3\frac{1}{2}$ sq. ft.), while that of one weighing 10 kgrm. (22 lb.) measures .555 sq. metres ($5\frac{1}{2}$ sq. ft.), and that of a child weighing 40 kgrm. (88 lb.) measures 1.442 metres ($14\frac{1}{2}$ sq. ft.).

Therefore the amount of heat lost by children of the respective weights of 5, 10 and 40 kgrm. will stand in the proportion of .350, .555, and 1.442, and not in the proportion of 5, 10 and 40, as might naturally be assumed.

The reason why the dissipation of heat is in proportion to the superficial area, and not to the weight, is because the heat is chiefly lost by radiation and conduction from the skin, and the superficies is not proportional to the weight. As a matter of fact, under normal conditions, some 60 per cent. of the total heat dissipated is lost by radiation and conduction, some 35 per cent. by evaporation of water at the surface of the skin and of the lungs, and the remaining 5 per cent. is lost in the urine or in other discharges from the body.

Now, since the quantity of food required by any particular infant is dependent on the amount of heat lost by radiation, conduction and evaporation, and since the amount of this loss is itself dependent on the superficial area of the skin, it is quite easy, provided the amount of heat lost by any one given infant of known weight is known, to calculate from the known data the food requirements of any other infant situated under similar circumstances.

Since we know the average weight of infants of different ages, we also know their average skin surface, consequently we know their average loss of heat, and also their average food requirements.

From these simple data it has been estimated that during the first three months of life an infant requires enough food to supply 99

* Pfaundler and Schlossman, American edition, vol. i, p. 435 (second edition).

calories or units of heat for every kilogramme (2 lb. 3 oz.) of body-weight; a calorie, or unit of heat, being that amount of heat which is required to raise 1 litre (35 oz.) of water through 1° of temperature (Centigrade).

For instance, an infant $2\frac{1}{2}$ months old and weighing 5 kgrm. (11 lb.) will require in the twenty-four hours enough food to produce 495 (99×5) calories. By a similar method of calculation it has been estimated that on an average during the next three months of life infants require the equivalent of 94 calories per kilogramme (2 lb. 3 oz.) of body-weight; or, to take a concrete example, an infant 5 months old and weighing $7\frac{1}{2}$ kgrm. ($16\frac{1}{2}$ lb.) will require a food equivalent of 705 (94×7.5) calories. Again, on the same basis, it has been estimated that during the last quarter of the first year of life an infant will require a food equivalent of about 75 calories for every kilogramme (2 lb. 3 oz.) of body-weight.

Now how much milk will infants of different ages and different weights require to afford the necessary number of calories?

The amount of heat or the number of calories afforded by the combustion of milk is not absolutely constant, because the chief heat-producing element in milk, namely fat, is itself liable to variation, but on an average it may be assumed that 1 litre (35 oz., or $1\frac{3}{4}$ pints) affords on combustion 700 calories.

If a more accurate estimation of the caloric value of any particular milk, or milk mixture, is required, it may be made from the following data: 1 grm. (15 gr.) of fat will produce 9.1 calories, 1 grm. of sugar will produce 4.1 calories, and 1 grm. of protein will also afford 4.1 calories.

On the basis of the above data it is quite easy to calculate how much milk of any particular percentage composition babies of different ages will require. Let us take the simple example of an infant three months old weighing 5 kgrm. (11 lb.). In twenty-four hours such a baby will dissipate 495 (99×5) calories in the twenty-four hours.

How much milk will be required to afford this number of calories? If 1 litre (35 oz.) affords 700 calories, by quite a simple sum in proportion it may be shown that 495 calories are afforded by 700 c.c. ($24\frac{1}{2}$ oz.).

Theoretically, therefore, an infant of the above age and weight will require 700 c.c. of milk to compensate for the 495 calories of heat it will lose in the twenty-four hours by radiation, conduction and evaporation, but it will also require a certain additional amount to provide for growth or increment in weight.

On an average a healthy infant of this age will show an increase in weight of nearly 30 grm. (1 oz.) during the twenty-four hours. How much milk will be required to afford material for this growth?

The solid constituents of the baby's body are rather more than twice as much as those of milk, exactly in the proportion of 28.2 to 12, so that assuming that the solids of milk are of the same kind as those of the body, the baby must consume about 60 c.c. (2 oz.) of milk in the twenty-four hours to provide 30 grm. increment in body-weight. This, added to the 700 c.c. required for heat-production, will give a grand total of 760 c.c. ($26\frac{1}{2}$ oz.) of milk in the twenty-four hours.

Calculations such as these are extremely valuable in giving us a general conception of the quantitative food requirements of infants, but if we rely too implicitly on them in calculating the dietary of any particular infant we are quite certain to go widely astray. A baby in a calorimeter does not behave as a baby in the nursery; it is situated under strange and unnatural conditions. Indeed, for the most part infants in calorimeters become restless and fretful and cry continuously, thereby wasting much energy, and dissipating a considerable number of units of heat by evaporation of moisture at the lungs' surface. And further, we have no right to assume that under the equable conditions of temperature obtaining in the calorimeter the amount of heat lost by radiation and conduction is the same as that which is lost under the ever-varying conditions of a normal environment.

Then, again, appetite will be influenced by the strange conditions, and a number of other complications will be introduced which must necessarily detract from the accuracy of the calorimeter results. Without entering into further details it is obvious that the conditions which determine food requirements in a calorimeter are not identical with those which determine food requirements in a nursery.

The more recent work of Dr. P. Lavalie* shows how important are considerations of clothing in estimating the amount of heat lost by radiation and conduction; in other words, how enormously an infant's food requirements are modified by its clothes. Dr. Lavalie, using a calorimeter of the D'Arsonval type, experimented with infants wearing different articles of clothing. Leaving the babies in the calorimeter for varying periods of time, he estimated the exact number of calories which were lost by radiation and conduction in accordance with the nature and character of the clothing

* Congrès National des Gouttes de Lait tenu à Fécamp les 26, 27, et 28 Mai, 19'2; Report, p. 79.

worn. He found, for instance, that if an infant wore a simple bonnet which covered the parietal and occipital portions of the head, there was an actual saving in heat expenditure which was equivalent to 65 calories, or to the combustion value of 60 c.c. (2 oz.) of milk. In other words, an infant wearing such a bonnet requires 2 oz. less milk in the twenty-four hours than an infant without such a covering to the head. Further, he estimated by the same method of experimentation that if the legs were protected by suitable stockings an economy of 220 c.c. ($6\frac{1}{2}$ oz.) was effected, and that the difference in heat expenditure when woollen and cotton shawls were used was represented by an equivalent 70 c.c. ($2\frac{1}{2}$ oz.) of milk.

Such experiments prove how dangerous it is to attempt to apply theoretical principles to the practical management of infants; it is so easy to leave out important factors in the calculation. There can be no doubt at all that the most important factor, in an infant's requirements for food, is the factor of heat dissipation. An infant at rest utilises at least 90 per cent. of its food in maintaining its body temperature at the required level: unlike an adult individual it diverts but little energy into the channels of mechanical work, and, as we now know, although it grows rapidly, the amount of food required for this purpose is only equivalent to the intake in the twenty-four hours of some 60 grm. (2 oz.) of breast-milk. It therefore seems almost unaccountable that in the past the question of clothing and environmental temperature should not have been taken into consideration. A few weeks ago I discussed these matters with a lady who takes a great interest in infant welfare work. "It seems to me," she said, "that it would be of great interest to calculate how many garments a baby would have to wear to enable it to do without any milk at all. I think some of our mothers must unconsciously be trying to solve this problem if we are to judge by the multiplicity of clothes they crowd on the bodies of their unfortunate infants." Such a *reductio ad absurdum*, if properly appreciated, emphasises the important part that clothing plays in the feeding of infants.

I feel sure that it is very necessary to draw attention to this side of the question, for we have only to read the writings of even the greatest authorities on infant feeding to learn how entirely this aspect of dietetics is neglected. Prof. Camerer is probably one of the greatest authorities in the world on the food requirements of infants, but this is what he says in his otherwise most admirable article on "Metabolism and Nutrition" in Pfaundler* and Schloss-

* Second American edition, p. 381, vol. i.

man's text-book on the 'Disease of Children': "The influence of heat and cold can be nearly eliminated by means of clothing and dwellings."

That is to say, Prof. Camerer believes that clothing and housing conditions do not affect the question of food requirements; that in these respects all children are similarly situated, and that their different food requirements depend on other factors.

I would, however, go so far as to say that in estimating the food requirements of any particular infant, the *only* important factor that we need take into account is the varying one of "opportunity for heat dissipation." I do not mean by this that we must not take into consideration such matters as capacity to digest and assimilate food, habit, idiosyncrasies, and so on; all such factors are of the greatest importance. What I mean is this—that, given two infants of equal ages and equal weights and growing at the same rate, and with normal digestive and assimilative functions, their respective food requirements, apart from the very small quantity required for growth and work, will be absolutely dependent on the amount of heat that is lost by radiation, conduction and evaporation of water. To put the case more concisely, I maintain that the different amounts of food these two infants will respectively require will be dependent on the number and thickness of their clothes, on the amount of skin-area (face, head, hands, feet, etc.) exposed to the air, on the temperature of the surroundings, on the degree of humidity of the air, on the ventilation, on the temperature of the bath, and on the number of hours spent in the open air, or in the confinement of the house; that these factors may be entirely different in the two cases and necessitate totally different quantities of food.

I repeat that it gravely misrepresents the case to state that "the influence of heat and cold is eliminated by the means of clothing and dwellings." I admit that the influence of "*cold*" is almost eliminated in the case of the slum infant, who is wrapped in a multiplicity of garments, sleeps in its mother's arms or in her bed, and is seldom given a bath or taken out of doors, but I submit that therein lies the difference between such an infant's food requirements and that of an infant rationally managed with respect to clothing, housing, exercising, etc.

In the one case there is no opportunity for heat dissipation, and hence there is an extremely restricted demand for heat production, while in the other, although the demands may vary greatly with the circumstances, there is always ample opportunity for loss of heat and always a corresponding demand for food.

Although in the past I have myself been guilty of drawing up many a table of quantities for the feeding of infants of varying ages, I fully admit now that such tables are worthless unless other important considerations such as those of clothing, housing and airing, are simultaneously taken into consideration and allowances made for them.

The second method of estimating the quantitative food requirements of infants, namely the empirical one of calculating the average amount of milk consumed by healthy infants at the breast, has provided us with a large amount of data for drawing up standards for the artificial feeding of infants, but I submit that deductions drawn from these findings are as liable to misconstruction and misrepresentation as are the results of the more scientific calorimetric method.

The amount of food consumed by breast-fed infants has been estimated by the method to which some years ago I ventured to apply the term "test-feed"—that is to say, the infant is weighed on accurate scales before and after feeding; the difference between the two weighings represents the amount of food consumed. By making a number of such estimations, or by estimating the amount consumed at each feeding, certain averages have been arrived at, which are supposed to represent the average requirements of normal infants, and these figures have been indiscriminately applied to the case of all infants no matter what be the circumstances of the hygienic surroundings.

Now the point that I wish to make perfectly plain is this: the observations on which we rely have been made on infants living under the very best hygienic condition; some of them have been the observer's own children, some of them have been infants born and tended in public maternity institutions, where every care and attention have been lavished on the mother, and the standards thus arrived at have been supposed to be applicable to the case of the slum infant, living under the worst possible hygienic condition, and whose mother is probably badly fed or half starved.

A considerable number of figures have been provided by such means, and on the whole I find the standards thus estimated agree very closely with the standards I have myself computed from estimating the amount of breast-milk consumed by the infants of well-to-do mothers in England. On the other hand, until I undertook a long and tedious series of observations on the amount of breast-milk consumed by the average slum infant, we had no criterion whereby to judge how much food such infants actually consumed. It was

taken for granted that they obtained as much milk as the better-conditioned infants on whom observations had actually been made.

During the last eight years I have made a practice of giving each breast-fed infant who is brought to my clinics a "test-feed," or perhaps many "test-feeds." In this way I have accumulated an enormous amount of evidence on the subject.

It is true that I have not been able to make an estimation of all the feeds given in the twenty-four hours in any one particular case. I have had to content myself with estimating the average amount consumed at individual feedings, but all the same I have now made so many estimations at different times of the day that I feel sure that my averages for single feedings, and consequently for the twenty-four hours, are fairly accurate. In estimating the total amount taken in the twenty-four hours from the amount taken at a single feed, one must allow for the total number of feeds and for the fact that the largest feed in the day is usually the first feed (difficult to estimate by the "test-feed"), in the morning after both mother and infant have enjoyed a long rest. Further, one must make some allowance for the fact that in the strange environment of a dispensary or a hospital an infant will not attend to the business of sucking quite as well as in the home. But making allowance for all such sources of error, I find that the average consumption of breast-milk by the slum infant is about 33 per cent. less than the estimates given by German observers for institute infants, or than the estimates I have myself made in the case of infants in well-to-do families.

An examination of the following tables will show how widely my figures differ from the standards arrived at by foreign observers; it will further show how closely they agree with the figures independently arrived at by Dr. Ronald Carter, who carried out a similar series of experiments on the infants attending at his infant consultations in North Kensington.

In the first horizontal column I give my own figures, which refer to "test-feeds" conducted in the case of slum infants attending at my infant consultations in Marylebone. In the second column I give those of Dr. Carter, which apply to a similar class of infant attending at his infant consultations in North Kensington. In the third column I give my own figures for sick infants attending at my out-patient department at the Queen's Hospital for Children, Hackney, a very poor district in the N.E. of London. In the remaining columns will be found the figures supplied by German observers. These refer for the most part to institutional infants, or to their own

children. My figures, as well as those of Dr. Carter, are based on a very large number of observations, whereas those of the German observers depend sometimes on single observations, sometimes on small groups of cases, but in no case on a large number of estimations.

TABLE I.—*Showing the Average Amount of Milk consumed at a Single Test-feed during the Various Ages up to Nine Months according to Different Observers (1906–11).*

		Age.										
		Weeks.			Months.							
		2	3	4	2	3	4	5	6	7	8	9
Slum infants in London	Marylebone figures	Oz. 1·87	Oz. 1·62	Oz. 1·95	Oz. 2·04	Oz. 2·26	Oz. 2·23	Oz. 3·0	Oz. 2·81	Oz. 3·08	Oz. 2·67	Oz. —
	Kensington figures	—	1·75	1·85	1·8	2·0	2·15	2·5	2·67	2·72	2·9	3
	Queen's Hospital											
	figures	—	1·0	1·47	2·0	1·84	1·35	2·18	3·0	2·08	—	—
Institutional infants or private cases in Germany	Peters' figures	2·4	2·7	2·87	5·42	—	—	—	—	—	—	—
	Camerer's figures	2½	3½	3½	3½	4½	3½	—	—	—	—	—
	Beuthner's figures	2	2½	2½	3½	4½	4½	5	—	—	—	—
	Feer's figures	2·5	2·8	3·5	4·0	4·5	4·8	4·8	—	—	—	—
	Hachner's figures	2½	2½	3	5½	5½	5½	5½	5½	7	—	—

TABLE II.—*Showing the Average Amount of Milk computed to be consumed in the Twenty-four Hours by Infants of Varying Ages (1906–11).*

		Age.									
		Weeks.			Months.						
		2	3	4	2	3	4	5	6	7	8
Slum infants in London	Marylebone figures	Oz. 18·8	Oz. 14·77	Oz. 13·46	Oz. 16·38	Oz. 16·02	Oz. 15·85	Oz. 13	Oz. 18·25	Oz. 20·66	Oz. 12
	Kensington figures	—	16·5	14·5	20	14·5	13·2	17·2	21·5	15·4	26·2
	Queen's Hospital										
	figures	8	—	9·71	18·15	14·3	11·66	9·16	16·25	12	12
Institutional infants or private cases in Germany	Camerer's figures	19	20	28	28	28·25	30·5	33	33·5	—	—
	Feer's figures	17·5	15	20	27·5	26·25	27	28	34	30·5	—
	Beuthner's figures	13	18	19·5	27	28·5	28	—	—	—	—
	Peters' figures	16	17	20	21	—	—	—	—	—	—
	Hachner's figures	15	19	19	28	28	26	30	33	44	—

If we compare these several series of figures, we notice at once that the amount of breast-milk consumed by the slum-infant in London is considerably less than that which is consumed by a better class of German infant.

Take, for instance, the case of the three months old infant in Table II. Slum infants of this age consume, according to my figures, about 16 oz. (480 c.c.) in the twenty-four hours. According to Dr. Carter, such infants consume in Kensington $14\frac{1}{2}$ oz. (435 c.c.), an amount which is exactly the same as the sick infants of this age consume in Hackney. On the other hand, if we refer to the figures given by Camerer, Freer, Beuthner and Hachner, we find that, according to their estimates, infants of this age consume quantities which vary from 26 oz. (780 c.c.) to $28\frac{1}{2}$ oz. (855 c.c.). Feeling that my own figures in these tables were based on too small a number of individual estimations, I have recently repeated my experiments, and have estimated the average amount of all the test-feeds conducted at the St. Marylebone General Dispensary subsequent to the date at which these figures were published.

These figures I give in the following Tables III and IV. I give also the number of actual "test-feeds" on which these estimations are based. These "test-feeds" were given at the St. Marylebone General Dispensary between the dates April, 1911, and September, 1913.

These figures are to my mind extremely interesting, for in each case they show that the infants in my second series (Tables III and IV) obtained more milk than those of my earlier experiments (Tables I and II). The increase is so constant and uniform that I cannot assign it to any other cause than that, owing to my experience with the "test-feed," and to the lessons that I have derived therefrom, I have been more successful of late years in overcoming the difficulties connected with the management of lactation, and because I have exercised more care in creating a greater demand for food on the part of the infant by modifications in the clothing and in other hygienic conditions.

But from whatever point of view these figures are regarded they afford ample material for reflection. For instance, if we are faced with the duty of determining how much food an artificially fed infant is to receive, shall we be better advised in following the standards afforded us by the German observers, or by taking our cue from the exiguous breast allowances consumed by the slum-infant according to my own tables? This depends, I believe, on the hygienic surroundings of the child.

TABLE III.—*Average Amount of Breast-milk consumed at a Single Feed by Slum-infants in Marylebone (between April, 1911, and September, 1913).*

	Age in months.							
	1	2	3	4	5	6	7	8
Quantity of milk consumed .	Oz. 1·94	Oz. 2·50	Oz. 2·75	Oz. 2·37	Oz. 3·37	Oz. 3·37	Oz. 2·56	Oz. 2·50
Number of estimations on which figures are based .	60	43	20	20	10	8	4	2

TABLE IV.—*Average Amount of Breast-milk computed to be consumed during the Twenty-four Hours by Slum-infants in Marylebone (April, 1911, to September, 1913).*

	Age in months.							
	1	2	3	4	5	6	7	8
Quantity of milk consumed .	Oz. 17·36	Oz. 20·68	Oz. 18·20	Oz. 18·20	Oz. 22·40	Oz. 20·30	Oz. 18·21	Oz. 17·72

Here in London we know that the mortality from diarrhœa and wasting diseases is on the whole much greater among the artificially fed than among those fed at the breast. If slum breast-fed infants suffer from any high degree of relative starvation, how is it that their mortality-rate is so low, and why is it so high among the artificially fed infants, who receive a very much larger amount of food? That the latter do receive a much larger quantity is known to everybody with any experience of the methods of artificial feeding indulged in by the poor mothers of London.

I am quite sure that on an average the artificially fed slum-infant receives 30 to 60 per cent. more food, estimated according to its caloric value, than does the breast-fed infant of the same age.

Now my more recent statistics in Marylebone prove that of the infants attending regularly at my infant consultations, those who are artificially fed show a slightly lower proportion of cases of diarrhœa and malnutrition than those who are breast-fed. I attribute this result entirely to the fact that my long experience with the test-feed

has taught me that the average slum infant requires very small quantities of food, and that on small quantities of food, if the latter is quantitatively adjusted to the physiological needs, the slum-infant can fare extremely well.

As I have already explained, the quantity of food required by the infant is determined by three factors: (1) the rate of growth, (2) the mechanical work done, and (3) the quantity of heat required to maintain the bodily temperature. The first two factors are almost negligible, so that for all practical purposes the amount of food an infant requires to meet its physiological needs resolves itself into the question, "How much heat does it lose by radiation, conduction and evaporation of water?"

The slum-infant is, as a rule, enveloped in many more thicknesses of clothing than the well-to-do baby, it is kept in hot, ill-ventilated rooms, and, in fact, is deprived of all those essential stimulants which create a demand for food. I feel convinced, therefore, that Nature, in supplying such slum-infants with a very restricted allowance of breast-milk, is wiser than we are when we feed them artificially on rations, which are physiologically adjusted to infants with greater food requirements, with a more active metabolism, and with better opportunities for dissipating heat.

I hope I shall not be misunderstood when I say that the ordinary slum-infant, if artificially fed, should be fed on a very restricted dietary. I do not approve of starvation in any form. I never rest content until the infants for whose health I am in any way responsible manifest a demand for larger allowances of food. A greater demand is created by less clothing, by more air, by more sun, by more exercise, and by a more liberal supply of all those stimuli which quicken the vital processes. With a greater demand for food there should be a correspondingly greater supply, but to give increased quantities of food before there is a physiological requirement for it is to court disaster. Indeed, the human body positively bristles with mechanisms which protect it against the pathological consequences of excessive feeding; some of these effect their object at very little expense to the comfort and well-being of the individual, others entail considerable strain.

The simplest method of counteracting the dangers due to excessive feeding is that of storing up the excess in some form available for future use. Carbohydrates and fats can be most conveniently and safely stored up in the form of reserves of glycogen and fat; on the other hand, there is no natural provision for the storage of reserves of nitrogenous or proteid foods; such supplies must be put

to immediate physiological use, or expelled from the body. Such expulsion clearly entails expenditure of energy as well as wear and tear to the eliminating organs.

Next to storage, increased combustion is the readiest means of defence against the excessive consumption of food, and this method of disposal applies to all classes of food. In order that there may be an active combustion it is essential that the supply of oxygen should be ample, and that the metabolic processes should be maintained at a high level. When such is the case all varieties of food are oxidised or reduced to their normal end-products, carbonic acid, water and urea, with the production of a corresponding quantity of heat. On the other hand, if there is curtailment in the supply of oxygen, there may be a short-circuiting of these processes, and in such circumstances the oxidation is incomplete, the heat produced less, and a number of intermediate bodies, such as fatty acids, are formed which dispose to a condition of acidosis with all its attendant evils. Subsidiary lines of defence consist in loss of appetite, diarrhoea, vomiting, catarrh and mucous discharges, all of which are designed to preserve the life of the individual as a whole, though they may inflict damage on certain of its parts.

When any one of these protective mechanisms is brought into play, evidence is afforded by the fact; in other words, pathological symptoms are produced, some of which may be so trivial as to escape observation, while others may be so obtrusive as to attract the attention of the most dull-witted observer.

An abnormal increase in weight, say of 10 to 14 oz. per week, in a baby under a year old, if maintained for any prolonged period of time, should at once suggest that the storage resources of the body are being over-strained, and such an event should lead us to expect that when the critical limit is reached, resort will be made to inner lines of defence, with possibly more serious consequences to the individual as a whole.

Again, if the capillaries of the cheeks are dilated, if there is sweating about the head, and if the respiration-rate is unduly raised, we are entitled to suspect, in the absence of a better explanation, that reserve methods of heat-dissipation are being called into requisition. Then, if we are wise, we shall take steps to ensure that worse things do not befall the child. We should, in fact, curtail the supply, or increase the demand for food.

It is clearly the duty of the physician to exercise the greatest vigilance in the detection of these early symptoms, but it is very difficult to convince the lay mind that rosy cheeks and a fine weight

record can be of unfavourable augury. It is a matter of almost daily experience for me to find that attacks of bronchitis, diarrhœa, or intestinal toxæmia have been preceded by prolonged periods of apparently exuberant health.

One of the great arts in infant management is to proceed slowly; the young child cannot develop indefinitely fast: "*festina lente*" should be the guiding principle.

I cannot help feeling that in this account of the food requirements of infants I have destructively criticised many of our best-cherished beliefs without replacing them by any practical substitutes. It is all very well to say that artificially fed slum-infants are more often overfed than not, but it is quite a different story to define in what an optimum dietary for such infants really consists. Hedging myself in with all possible reservations, and with full knowledge of the scientific worthlessness of any such estimates, I am prepared to venture the statement that no infant, breast-fed or artificially fed, can be considered to be in a satisfactory condition unless its physiological demand for food is of the following approximate standard. An infant 3 months old and weighing 5 kgrm. (11 lb.) should not require less than 690 c.c. (23 oz.) of breast-milk, or its equivalent, in the twenty-four hours; an infant 6 months old and weighing 7.5 kgrm. (16½ lb.) should not require less than 900 c.c. (30 oz.); and an infant 9 months of age should require not less than 1080 c.c. (36 oz.). If, when taking food in these quantities, there is evidence, by reason of the development of any of the symptoms already mentioned, that there is an excessive intake, I would advise that steps be taken to increase the demand for food by a revision of the hygienic management of the child. As I have already stated, a demand is created when the appropriate stimuli of air, light, and cold are applied.

HÆMORRHAGIC AND GANGRENOUS VARICELLA, WITH NOTES OF TWO CASES.*

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UNTIL comparatively recent times varicella was regarded as a most benign disease; many still believe it to be a trivial condition, but recent writings have shown that several more or less severe com-

* Abstract of a thesis for the M.D. degree, Glasgow.

plications may occur even in an apparently mild attack in a healthy individual. In view of the occurrence of fatal cases from nephritis, septicaemia and pyaemia, severe inflammatory eye conditions and gangrenous and hæmorrhagic forms, varicella ought now to be regarded as a somewhat more serious disease and given more consideration, especially when it occurs in patients who, for some reason or other, are predisposed to a severe attack or any of these complications. The association of tuberculosis and gangrenous varicella has occupied the attention of several writers but so far the question has not been settled. There seems to be no doubt that in many cases there is some association. Several cases have been reported in which death from tuberculosis occurred soon after an attack of varicella, and many cases of gangrenous varicella have occurred in tuberculous children.

Reference to the literature shows that complications of varicella are few in number and rare in occurrence. Kieffer in 1905 was able to collect only forty-three cases of gangrenous varicella; of these, twenty-nine died, so that a fatal issue is not so uncommon as many writers are inclined to believe. Many of these deaths Kieffer thought were due to tuberculosis.

The greater number of gangrenous varicella cases that have been described have presented multiple gangrenous lesions; there are very few in which one large lesion was present, while there are only some ten or twelve true cases of the hæmorrhagic type on record. Many gangrenous cases have presented a hæmorrhagic stage, while many cases which at first appeared to be hæmorrhagic became gangrenous later on. The two forms may therefore be considered together under one heading. Both of the cases described here presented one large extensive gangrenous lesion at first, while the second one showed a hæmorrhagic stage before gangrene occurred. Both cases occurred in patients convalescing from scarlet fever in a ward which had become cross-infected by a patient who was admitted with scarlet fever and incubating varicella. The two cases occurred within ten days of one another.

CASE 1.—On December the 3rd, 1912, a healthy, well-nourished boy, aged 6 years, was admitted to hospital suffering from scarlet fever.

On January the 2nd, 1913, he developed varicella, of which there had been a previous case in the ward on December the 17th; fresh vesicles appeared for three days but the rash was not copious. There was nothing in his condition to attract attention until the morning of January the 5th, when his temperature rose to 101° F. He felt well;

a few pustules were present. He had been using his fingers to allay irritation in his nostrils and had been scratching his skin in several places.

Towards evening the temperature rose, and at eight and twelve o'clock was 103° F. The pulse was frequent, 144, and of good quality, he had slight headache. During the night he was somewhat restless. The next morning a patch of redness was discovered over and below the middle of the left clavicle about the size of a crown piece. In this area were two pustules about an inch and a half apart.

He was now much more acutely ill. He had headache, but no vomiting; the breath was foul; the tongue was thickly furred—previously it had been clean—and there was considerable faucial injection and swelling of the tonsil. He was very fretful; he lay in bed slightly on his left side and with his head inclined to the left—an attitude not unlike that adopted by a person who has a fractured clavicle. Any movement of the head, arms or trunk caused him to cry out. The patch of redness increased rapidly, and in four hours had spread right over the left shoulder, downwards on the chest-wall to the level of the fifth rib, and across the chest and front of the lower part of the neck on to the anterior aspect of the right shoulder. The reddened area of skin was swollen, but not glazed at all, and the spreading margin fairly well marked. Marked cutaneous tenderness was present, making it difficult to palpate, but, judging from the amount of swelling, the subcutaneous tissues seemed to be involved as well. The swelling immediately above the manubrium was very soft and puffy. One pustule was present immediately over the middle of the clavicle, while the other was lower down and nearer the middle line. Before this condition occurred there had been no redness or swelling round these pustules to indicate that any inflammatory process was going on.

Fomentations of 1 in 40 carbolic acid were applied to the part every three hours; fluids only were given by mouth; one grain of calomel with thirty of jalap powder was administered.

During the day the temperature continued to rise, and in the evening was 104.8° F.; tepid sponging reduced this to 101.2° F. He was very restless during the night. Next day the redness had spread still further, but much less rapidly; the parts were more swollen, but no fluctuation was made out.

Constitutional disturbance was now much more evident. He presented the appearance characteristic of a severe toxæmia. The temperature continued to run about 104° F., and thirst was marked.

As the bowels had not moved, castor-oil was given by mouth, and a soap-and-water enema given. A copious evacuation seemed to relieve him considerably.

During the next twenty-four hours his condition did not alter materially. The inflammation had increased, but there was no sign of free fluid. Boracic acid fomentations were at this period substituted for the carbolic acid ones. Although the face was flushed, there had been no tendency for the redness to spread to the scalp or face.

The child was by this time so acutely ill that it was deemed necessary to make exploratory incisions. Under light chloroform anaesthesia the two pustules were lightly scraped with a small blunt spoon. The lower one was quite superficial, but the upper one had evidently perforated the whole thickness of the skin, as, after scraping it, a distinct circular aperture about an eighth of an inch in diameter was visible. A small probe passed through this aperture could be moved freely in all directions for a considerable distance under the skin. The aperture was distinctly punched out in appearance, and from it, on pressure, there exuded small quantities of thin, watery, purulent fluid.

A large free incision was made from above downwards into the subcutaneous tissues; smaller incisions were made on each side of this. Small amounts of thin, watery, purulent fluid came away from several small pockets in the cellular tissues—not from a general cavity. The incisions showed the cellular tissues to be in a complete state of sloughing; a large yellowish slough appeared in the bottom of the wound. No muscle was visible. The incisions did not by any means reach to the edges of the affected area; they were made, however, large enough to secure adequate drainage of the parts, which appeared as though more sloughing might occur.

A large 1 in 40 carbolic fomentation was applied, and allowed to remain on for eight hours, at the end of which time it was found that about a square inch of skin, bounded on three sides by the incisions, had become black. A boracic acid fomentation was then applied for six hours; no further discoloration had occurred, however, when it was next dressed.

Next day the edges of the wound had retracted considerably, exposing the slough more. Dressings were now applied three-hourly, and consisted of lint wrung out of hot normal saline solution and then dipped in a solution of 10 per cent. ichthyol in glycerine.

The boy's condition was evidently much relieved by the operation, but the redness again began to spread over the left shoulder and into the left axilla and over the deltoid region.

On the following day the wound looked very ugly indeed, so much had the free edges receded. The yellowish slough had become blackish in parts, but no more discoloration of the skin had occurred. The wound was 4 in. long, and at its upper and lower parts $2\frac{1}{4}$ in. and $3\frac{1}{2}$ in. broad.

Although the edges of the wound remained reddened and undermined, it soon began to heal; the slough separated rapidly, exposing muscle; there was no excess of discharge—this had all along been quite sweet. On the fourth day after the operation the wound had changed considerably. The redness was limited to a margin of one to two inches all round, there was less undermining of skin, and the slough had separated, leaving a healthy granulating surface. Fibres of the platysma myoides, pectoralis major and other smaller muscles were visible. There was a little tenderness, but movement was free; the edges had receded so much that the outline of the outer three fourths of the clavicle was distinct at the bottom of the wound. Hydrogen peroxide and saline solution were used to clean the wound, while the dressing now consisted of lint wrung out of saline solution.

On the 22nd, fourteen days after operation, the boy's condition was quite satisfactory. The wound was healing quickly, and had become quite like a maple-leaf in shape. The whole outline of the clavicle was now visible; this was due to excessive retraction of the edges at the lower and innermost end of the wound. The loss of the subcutaneous tissues had made no appreciable difference in the outline of the parts. Red lotion dressings were used now night and morning only.

On the 29th a blotchy erythematous rash appeared all over his body, and persisted for several hours. This rash was very indefinite in nature, and was probably due to absorption of the red lotion, which was stopped, and normal saline used again.

He was allowed up with the arm bandaged across the chest, but on February the 3rd he developed a subacute attack of rheumatism. Both tonsils were inflamed and had large deposits. Four separate cultures showed a mixed streptococcal and staphylococcal infection. The attack of rheumatism yielded to salicylate treatment in a few days, but the throat did not clear up until February the 12th. The wound was not affected in any way.

The wound did not finally heal up until March the 20th. The recovery was in every way very satisfactory.

Cultures from the wound gave a pure growth of *Staphylococcus pyogenes aureus*.

Fig. 1 shows the parts two days after the operation.

There seems to be no reason to doubt that the case was one of the severest types of gangrenous varicella. The upper vesicle had become infected with a particularly virulent staphylococcus. The secondary infection had been so acute as to cause a gangrenous perforation of

FIG. 1.



the skin in the base of the vesicle. Once in the loose cellular tissues, the organisms continued their destructive work, and caused fairly extensive necrosis. At first one was inclined to ask if the condition was diphtheritic, particularly as there had been much scratching.

Free incisions, so as to allow of free drainage, and the frequent use of mild antiseptics are points to be noted in the treatment.

CASE 2.—A well-nourished healthy boy, aged 4 years, was admitted to hospital on November the 24th, 1912, suffering from scarlet fever. The attack was comparatively mild ; there was very

little desquamation and no complications occurred. He was allowed up on December the 14th. Being in the same ward with Case 1, he was, of course, under special observation.

On January the 13th he developed chickenpox. The attack seemed to be fairly mild at first and the rash was not copious, but on the fourth day his temperature was 99° F., a punctate erythematous rash appeared suddenly all over, he had stomatitis, and the fauces became very red. There were a few pustules present now. The boy was distinctly ill. Next day the rash had completely disappeared and his general condition seemed better. At four o'clock on the following morning he was very flushed, looked ill, and had a temperature of 101.4° . Three hours later a patch of redness was noticed, about the size of the palm of the adult hand, on the posterior aspect of the right thigh. This redness had appeared suddenly and spread rapidly, as in five hours' time it was three times as large. A small septic focus appeared on the left thumb at the same time. He was now acutely ill, he had headache and was very pale. The temperature continued to rise, the pulse became frequent, 156, and thready; thirst was excessive and he lay on his back in bed.

The affected area soon became much swollen and indurated and very tender to touch, the spreading edges were rather indefinite. When first observed there were no vesicles or pustules in the patch of redness, but right in the centre of it there was a small pin-head-sized papule. The patch in its rapid spread, however, soon involved on the inner aspect of the thigh a vesicle which was crusted and quite black in colour. Before this patch appeared there had been no signs of any inflammatory change round any of the vesicles or pustules.

Fomentations wrung out of normal saline solution and 10 per cent. ichthyol in glycerine were at once applied to the part and changed every three hours. During the afternoon the punctate erythematous rash appeared again. Towards evening the boy's condition became distinctly worse; the redness, now extended from hip to knee; there was much more involvement of the inner aspect of the thigh than of the outer. The parts had become much more swollen, and although they looked tense they were really soft to palpate and pitted on pressure in places. In the centre of the patch, where the redness had first appeared, there was an area of skin, about the size of a penny, which was bluish-black in colour. He was now inclined to lie on his right side with both the knee and hip flexed. Any movement caused him to cry out with pain. The constitutional disturbance was well marked; the pulse was 160, the temperature 104.2° F., he had vomited and become very restless and fretful.

During the night he was restless and had no sleep. In the morning he looked very ill, the pulse was of worse quality and the temperature 102° F. The parts were more swollen; the redness had spread further, and now involved the scrotum and the left thigh at the gluteal fold. The bluish-black area on the thigh noticed on the previous evening now measured $3\frac{1}{2}$ in. in length and $6\frac{1}{4}$ in. in breadth, so that it had increased rapidly. In this area were three small bullæ, from which, on puncture, came watery sanious fluid. Much of the swelling of the thigh was due to œdema on the posterior aspect, chiefly on its upper part.

Under light chloroform anaesthesia during the afternoon five exploratory incisions were made on the posterior and inner sides of the thigh; there was a free flow of watery sanious fluid, the subcutaneous tissues were dark yellow in colour, but there was no evidence of pus or sloughing. Section of the skin showed the discoloration to be hæmorrhagic. Saline solution fomentations were applied every three hours. The subcutaneous tissues at night looked as though they were going to slough and there was a free flow of blood-stained fluid. The discoloured area, now quite black, had spread upwards and outwards towards the groin from the inner side of the thigh as a narrow strip, about an inch and a half broad.

Vomiting became more persistent; he was very restless and cried out frequently for drinks. The pulse was of such poor quality that three-minim doses of liquor strychninæ were given three-hourly by mouth. During the night he was very restless and had no sleep; at eight o'clock in the morning he had a rigor which lasted five minutes. The discoloured area on the thigh had spread still further and had become quite gangrenous.

The colour was bad and the skin generally cyanosed. The pulse was so weak as to be uncountable, the left side of the face was twitching frequently, vomiting was persistent. At this period he appeared to be dying. During the afternoon he was given a mixture containing hydrocyanic acid, magnesium carbonate, sodium bicarbonate and tincture of digitalis. Towards evening the vomiting ceased, and the colour and pulse improved. The scrotum had by now become much swollen and discoloured, and the superficial layers of the skin over the gangrenous area were commencing to peel in large pieces. During the night the patient slept about three hours. When the wound was dressed it was seen that the area of gangrene had become larger, and that two small bullæ had appeared on the scrotum. The gangrenous parts kept moist, but were now becoming a dull greyish colour, and, except at the scrotum, showed a fairly

definite separation edge. Much difficulty was experienced in dressing the parts at this period on account of the position of the leg and the tenderness. A solution of sodium citrate and chloride was used as a fomentation now. During the day his general condition improved slightly, but the swelling of the scrotum began to spread on to the lower part of the abdomen.

January the 23rd: The thigh now presented a large dull, greyish-white, moist, shrivelling area of gangrenous skin, extending from below Poupart's ligament in front round the inner aspect of the thigh to the posterior side, most of which was involved. A definite separation edge was present round the gangrenous portion of the scrotum. The parts beyond the gangrenous area were becoming less red and swollen, and there was some undermining at the separation edge all round.

Patient's condition had become more satisfactory; the temperature was 98–99° F., and the pulse 140–144; all over the body there were traces of the punctate rash and a degree of cyanosis. Twitchings were still visible; the vomiting had ceased, and he had enjoyed several hours' sleep. The stools were greenish in colour and a trace of albumin had appeared. The gastric mixture was stopped.

At 4 o'clock on the morning of the 24th he complained of pain in his left axilla, and three hours later cried out with pain when the left elbow was moved. Later on in the morning he became flushed, both pulse and temperature rose, and he vomited again. The gangrenous areas on the thigh and scrotum had separated more; there was now some fœtor, so iodoform powder was dusted all over the parts. It was impossible to tell at this period to what extent the subcutaneous tissues were going to separate. There was no apparent cause for the pain in the axilla, but the left elbow-joint was slightly but distinctly swollen all round. No crepitations were elicited, but there was a small faintly discoloured and tender area of skin behind and on the same level as the external condyle of the humerus. Movements, especially supination, made him cry out with pain. Boracic fomentations were applied to the elbow-joint every three hours. During the night he slept some six hours and only vomited once; at 6 o'clock in the morning he complained of pain in the right elbow. The sloughing parts continued to separate fairly quickly; no more iodoform was used, however, as there seemed to be too great a risk of absorption from the extensive raw surface. The left elbow was less painful to touch and on movement; the right, however, had become swollen and painful, and over the head of the radius there was marked tenderness and a faint discoloration

of the skin. Fomentations were applied here also. He vomited several times in the course of the day and his temperature rose to 104.4° F. The gastric mixture was given again.

Although he slept some five hours during the night he was restless and was mildly delirious at intervals. Early in the forenoon a rapid

FIG. 2.



change occurred. Vomiting became persistent, his colour got bad and his face pinched; the tongue became dry and the breath fruity. The vomit on several occasions consisted of small quantities of chocolate-coloured mucus; at other times it was greenish. Delirium became more marked.

The sloughs had separated still further and almost two inches of the adductor longus muscle were now exposed, and there was considerable undermining of the skin at the separation edge in the perinaeal region. There had been considerable retraction of the skin on the outer aspect of the thigh. There was no appreciable change in the elbow-joints.

Towards evening he went downhill rapidly; he wandered considerably, the temperature rose to 105.8° F., and the pulse became imperceptible. There seemed to be tenderness over the left patella and the joint was painful to move, but there was no swelling or discoloration.

He gradually became comatose and died at 5 o'clock in the morning of the 27th. There was no further increase in the amount of albumin. Unfortunately an autopsy was not allowed.

The history of the patient was rather interesting. He weighed $9\frac{3}{4}$ lb. when born and for six months thrived, and then suffered acutely from wasting disease for several weeks during which time he was not expected to live. Since then he had been healthy. Three months before he took scarlet fever his doctor treated him for a boil on the thigh. This seems to have been in the spot where the gangrenous lesion first appeared. There was no family history of tubercle or syphilis and the boy himself was quite healthy.

Cultures from the wound showed numerous groups of *Staphylococcus aureus* and a few streptococci. The photograph (Fig. 2) was taken immediately before the exploratory incisions were made. This case appears to have been a more severe one than Case 1. The pin-head-sized papule visible in the centre of the red patch at first appeared to be either an aborted vesicle or one which got very early secondarily infected. The infection was so acute as to produce a hæmorrhagic condition before gangrene set in. The occurrence of joint complications seemed to indicate a septicæmic or pyæmic condition.

Since the subject of gangrenous varicella was first described by Jonathan Hutchinson in 1880 comparatively little has been added to it. Most of the cases described about that period presented multiple cutaneous lesions and occurred chiefly in badly nourished or tuberculous children. Hutchinson and Stokes were the only two observers who found such cases in healthy children and believed such an occurrence was due to an idiosyncrasy. All the other writers, including Crocker, Barlow, Fagge, Abercrombie, Payne, Ashby and Wright, were inclined to believe that gangrene occurred in tuberculous children, and were almost but not quite convinced that tubercle was the most common cause. Barlow found tuberculous lesions in six out of eight autopsies; Abercrombie's case showed tuberculous abdominal foci; Payne's case died of acute miliary tuberculosis, as did that described by Ashby and Wright, two months after an attack of varicella.

In the later cases we do not hear so much about tuberculosis in association with gangrenous varicella, although most writers make

some reference to it. Probably a much more common cause of gangrene occurring in varicella is the recent occurrence of one of the other fevers. Jamieson's case followed soon after measles and whooping-cough; Staniforth's four months after measles; Griffith's after pneumonia, diphtheritic tonsillitis and measles; Alexander's during convalescence of whooping-cough and broncho-pneumonia, while several have occurred in convalescent scarlet fever cases. Other cases have followed debilitating illnesses—thus Silver's case succeeded an attack of gastro-enteritis during a very hot summer.

Many of the cases, however, have occurred in healthy children, and the more recent writings strengthen Hutchinson's views on that point.

The first case described, in which large gangrenous lesions were found, was that mentioned by Bellamy; here several large areas were involved both on the legs and arms. The gangrenous stage occurred after a well-marked hæmorrhagic stage. Spivak first described a case in which only one extensive area was involved; it was also the first case in which the scrotum was involved. There were two extensive lesions in Turner's case, while in Rolleston's case there was one comparatively large gangrenous patch on the eyelid, and in Watson's one area involved the inguinal region and the scrotum. All of these cases occurred in healthy patients.

Three classes of cases have been described of the gangrenous form of varicella: the first in which superficial ecthymatous sores appear, the second to which Hutchinson gave the name "*varicella gangrenosa*," and the third where single and extensive lesions are found. The first and second types are probably found more frequently in unhealthy children, and there is no doubt that ill-health has much to do with the occurrence of gangrene, but in the third type there seems to be a different condition altogether both clinically and pathologically. In this class one usually finds a single, more or less extensive lesion, with gangrene of the skin, subcutaneous tissues and deep fascia, so that frequently the deep-lying tissues—periosteum, muscle and glands—are exposed. Constitutional symptoms are as a rule severe, and fatal results are common from septicæmia and pyæmia. These cases occur, as a rule, in previously healthy children and over three years of age. Gangrene may occur at any time during the illness, but usually in the first days, and the process is invariably acute. The stage of gangrene in some of these cases has been preceded by a hæmorrhagic condition; this may be taken as evidence of the severity of the infection. It might, however, be evidence of a close pathological association between the hæmorrhagic and the gangrenous forms.

The diagnosis of such cases ought not to cause any trouble. The prognosis in the hæmorrhagic cases should always be guarded, while in the gangrenous forms it depends more or less on the age, number and degree of severity of the lesions, the amount of constitutional disturbance, and the presence of tuberculous or pyæmic lesions.

Treatment should chiefly aim at placing these patients under the simplest but most efficient dietetic, antiseptic and hygienic conditions.

Local treatment consists of boracic acid baths or fomentations, ichthyol as an ointment or as a 10 per cent. glycerinated solution, carbolic oil, nitrate of mercury and boracic acid ointments, perchloride of mercury solution 1-2000 to 5000, and various dusting powders. Normal saline solution frequently used is probably one of the best local applications.

The local conditions are often prevented from healing and new lesions caused by scratching, so that it is necessary in some cases to use cardboard splints and gloves in addition to keeping the nails short and clean. In the less severe forms most of the cases are best treated by good nursing and keeping the parts clean.

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A CASE OF PURPURA OF UNKNOWN ORIGIN WITH RAPIDLY FATAL TERMINATION.

By GEORGE PERNET, M.D.,

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London Post-Graduate Medical College.*

ALTHOUGH I am heading this note "Purpura," I am using that term in a general way and merely to indicate a symptom—viz. hæmorrhages into the skin. The case is an incomplete one, I admit, as a necropsy was not allowed. Notwithstanding, I am of opinion that it is worth recording.

The patient was a little girl, aged 9 years, who was brought to my out-patients' on account of spots about the legs. These, on investigation, turned out to be hæmorrhagic. I pointed out at the time to the graduates attending the clinic how important it was in such cases to keep the patient under observation, and that the first thing to do was to order the patient to bed. Though the cutaneous lesions were not very formidable, and the patient, as in this instance, appeared to be well otherwise, one could never tell what the upshot might be, especially as regards the viscera. I insisted on the necessity of examining the throat, a thing which should be done in a routine way in children, for diphtheria, etc. Further, the urine and stools should be examined for any evidence of blood. I pointed out, too, that the skin condition was a danger signal, a symptom only of trouble, which might be remote or secluded. I therefore admitted the child for further observation and investigation. As the case was a general one, Dr. Sydney Owen was good enough to examine the child thoroughly and take charge of it. I desire to express my thanks to him for allowing me to make use of his notes. I am also indebted to Mr. Hammond, the House-Physician, for his assistance in keeping a record.

The following notes were made :

76 CASE OF PURPURA OF UNKNOWN ORIGIN.

On July the 23rd, 1913, Elsie B—, aged 9 years, was admitted to Hull Ward, under Dr. Pernet, with hæmorrhagic patches in the skin, and then transferred to Dr. Sydney Owen.

She had been quite well until three weeks previously, when she complained of aching all over, and her ankles and knees became swollen. Later the elbows became involved. This swelling had disappeared.

A fortnight previously blotches appeared on the legs. Gradually she got worse, and was brought up to out-patients' skin department. No vomiting, no cough, bowels open each day. Measles two years ago.

Mother has rheumatism.

Patient appears quite healthy, cheeks being of a rosy colour. No purpura of face. Temperature and pulse normal. *Eyes*.—Conjunctivæ are normal. *Mouth and buccal mucous membranes*.—Tongue a little furred. No ulceration. *Fauces*.—Tonsils slightly enlarged. No redness. *Neck*.—No enlarged glands. No purpuric eruption. *Chest*.—Apex-beat fifth space, internal to nipple line. No cardiac murmur. *Lungs*.—Normal. No evidence of tuberculosis. *Abdomen*.—No purpuric eruption. Slight distension. No tenderness.

Extremities: Arms.—Nothing abnormal.

Legs.—A purpuric eruption, consisting of patches varying from $\frac{1}{4}$ to $\frac{3}{4}$ in. in diameter, are present below the knee, chiefly on the front of the leg. The thighs are not involved.

There are no swelling, pain or tenderness of any of the joints.

No enlarged glands are present about the body.

The purpuric eruption appears less intense than when child was seen in the out-patient department. It has a less purplish and a more yellowish appearance.

Urine.—No blood. No albumin. No pus.

July the 24th: Child appeared quite healthy this morning. She complained of slight tenderness over both knees and ankles.

The purpuric eruption is more yellow in colour to-day than yesterday. No fresh patches.

Child complained of slight pain in right iliac fossa this evening. Slight tenderness. No rigidity. She vomited twice, vomit consisting of contents of stomach. No blood in vomit.

Bowels open well; no melæna. Pulse and temperature normal. Urine normal.

July the 25th: This morning child's condition is a little worse. She has vomited twice since last night, vomit being of a yellowish colour and watery in consistence. No blood in vomit. She appears to have a slightly anxious appearance. Abdominal pain disappeared. No tenderness.

Rectal examination.—No tenderness. No fulness. Pain in joints has disappeared. Urine normal. Pulse 90. Temperature normal.

Evening.—Child has vomited three times since this morning. Her appearance gives cause for alarm. The pulse is 108 (when admitted 80) and temperature 99° F.

Bowels not open. No blood in vomit, which is of a yellowish colour and has no distinct smell.

The breath has an acetone odour and free aceto-acetic acid is present in urine. No sugar, blood or albumin is present.

July the 26th: Vomiting has continued during the night.

The pulse has risen to 112. Temperature 98.4° F.

The child's condition is much more serious, the face having a much more shrunken appearance.

The child is quite conscious, and complains of no pain except slight headache. She answers questions quite intelligently.

The vomit is bilious in character, not offensive, and acid in reaction. A fresh

purpuric eruption, consisting of patches varying from 1 mm. to 5 mm. in diameter, has appeared over left deltoid region. The eruption over the legs is less intense.

No cardiac murmurs are audible, and the pulse, though more rapid, is regular (118).

Abdomen is retracted; no tenderness, no rigidity.

As the bowels have not been opened an enema was given this evening. The result was slight and of constipated character, but no blood was present.

Optic discs are normal; no head-retraction and no abnormality in reflexes.

Temperature in the evening went up to 99° F.

Urine still gives aceto-acetic reaction, but neither blood nor albumin are present.

July the 27th: Vomiting has continued during the night, but remains of same character. Bowels not open. No rigidity. Abdomen slightly retracted. Urine same as yesterday. No fresh purpuric eruptions have appeared.

The temperature this evening went up to 100·5° F.

Dr. Elworthy, Pathologist to the Hospital, reports as follows:

Leucocyte count, 12,800; polymorphonuclears, 75 per cent.; coarse, 0 per cent.; mononuclear hyaline, 0 per cent.; large lymphocytes, 12·5 per cent.; small, 8·5 per cent.; transitional, 4 per cent.

Child has only vomited once since last night, and appears much more comfortable. She only vomited once during the day, and appeared more comfortable. At 12 at night her condition was much improved, and it seemed as if she would pull through. She slept until 2 a.m., when her pulse became irregular. Strychnine was given. At 3 a.m. her temperature went up to 104·5° F., and half an hour later she became unconscious. She remained in this condition for half an hour and died.

No post-mortem was allowed.

Treatment, which was necessarily empirical and symptomatic, consisted chiefly in rectal and subcutaneous salines (with glucose) and injections of strychnine and adrenalin. Horse-serum (5 c.c.) and antistreptococcal serum (5 c.c.) were also tried.

I may add that a surgical opinion was obtained, but Mr. O. L. Addison, who examined the case, could not put his finger on anything in that direction which might have helped us.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, November the 28th, 1913.

The President, DR. LEONARD GUTHRIE, in the Chair.

Recrudescence of Rickets with Tuberculosis and Infantilism.—Dr. C. E. ZUNDEL.—Former hospital records showed that the patient, a boy, now aged 14 years, was at the age of seven years treated as an out-patient and then as an in-patient. At that time he was described as very undersized and with marked rickets. At the age of eleven years he was admitted to hospital with

marked ascites, the abdomen being tapped six times in nine months. When he came under observation in June, 1913, his height was 3 ft. 4 in. and weight 2 st. 11 lb. Marked deformities of the forearms were present, due to recent fractures. There were some broncho-pneumonia and considerable ascites. Wassermann's reaction negative.

Bilateral Congenital Dislocation of the Hip in Twins.—Dr. F. G. CROOKSHANK and Mr. L. E. C. NORBURY.—The patients were females, aged 8 years 11 months. In each case there was marked displacement of the head of the femur on to the dorsum ilii on either side.

Nervous Cretinism.—Dr. F. G. CROOKSHANK.—The patient, a female, now aged 5½ years, was first seen in 1912, when it was noted that the skin was harsh, the gait tottery, and the knee-jerks increased. Later the gait became more ataxic and the speech became defective. As the result of treatment with thyroid extract the child could now walk and talk well, and had lost almost all her symptoms.

A Case of "Jaw-Winking."—Dr. CROOKSHANK.—The patient, a girl, aged 9 years, had congenital unilateral ptosis. When the muscles of her face were at rest the ptosis was considerable. When she depressed her jaw and "ringed" her mouth, not only did the ptosis disappear, but the sclerotic became visible on the affected side, above the cornea.

A Case of a Mesenteric Cyst which had Simulated an Intussusception.—Mr. PHILIP TURNER and Dr. H. TIPPING.—The patient, a previously healthy boy, aged 4 months, had a "crying fit," after which blood was passed *per anum*. After admission to the hospital a rectal examination showed the presence of recent blood though no lump could be felt. An anæsthetic was given, and then a movable tumour could be felt close to the umbilicus. When the abdomen was opened the lump was found to be a tense cyst, about an inch in diameter, situated in the mesentery in the angle between the ileum and the colon. It bulged into both these portions of the intestine, causing obstruction at the ileo-cæcal valve. The cyst-wall was so incorporated with the ileum and the colon that it could not be removed. The cyst was incised, the greater part of the wall clipped away and the remainder sutured to the parietal peritoneum. The child made an excellent recovery, but a sinus which discharged glairy odourless fluid still persisted. Histologically the lining membrane of the cyst had the same structure as the mucous membrane of the small intestine.

Two Cases of Dermatitis Herpetiformis Treated by Counter-Irritation.—Dr. W. J. MIDELTON.—The first patient, aged 7 years, had scarlet fever when three years old and this was followed by the dermatitis. The disease persisted until February, 1912, when counter-irritation was commenced. The patient was well in three weeks. There had since been occasional slight relapses.

In the second case, a boy, aged 7 years, the same treatment has been equally satisfactory.

Anterior Poliomyelitis, with Paralysis of the Abdominal Muscles and Collapse of the Lung.—Dr. G. A. SUTHERLAND.—The patient, a female, aged 15 months, had an indefinite illness, thought at one time

to be measles, in May, 1913. Three weeks later there was dulness over the right lung, and exploratory puncture was several times performed with a negative result. When readmitted in October, 1913, the legs showed signs of former poliomyelitis. The abdomen was prominent, and on crying two marked bulgings were seen, one occupying the upper two thirds of the right abdominal wall, and the other the lower two thirds of the left side. Over the right lower lobe posteriorly there were impaired breath-sounds. It was suggested that the pulmonary signs were due to massive collapse of the lung, and that this was due to paralysis of the muscles of the abdominal wall.

Enlargement of the Liver with Ascites.—Dr. J. W. CARR.—The patient, a boy, aged $2\frac{1}{2}$ years, was admitted to hospital for ascites in March, 1913, and was tapped on thirteen occasions. The liver now extended between two and three inches below the costal margin: it was hard and the surface felt slightly granular. There had been no hæmatemesis and only one transient attack of jaundice shortly before his first admission. Dr. Carr considered that the liver was almost certainly cirrhotic, but the cause of the cirrhosis was obscure.

Osteogenesis Imperfecta, with great Distortion of the Bones of the Lower Limbs.—Dr. F. J. POYNTON.—The patient, a girl, aged 11 years, has been admitted three times to University College Hospital and many times to Great Ormond Street with fractures of the bones of the legs. Her bones had been soft and easily broken from birth and she had never been able to walk alone.

Case for Diagnosis.—Dr. POYNTON also showed a girl, aged 5 years, with a slightly enlarged liver and spleen. Examination showed marked cyanosis of lips, tongue, and throat, and clubbed fingers. No bruits could be heard, but in May, 1913, there was a pulmonary systolic bruit: it was doubtful whether this was congenital or hæmic. Wassermann reaction negative.

Three Children in the same Family with Alopecia Areata.—Dr. POYNTON.—The cases had been treated successfully with suprarenal extract internally and salicylic and carbolic acids externally.

Ununited Fracture of the Neck of the Femur Treated by Operation eight years after the Injury.—Mr. H. A. T. FAIRBANK.—When first seen the limb was wasted and held in an everted position. Flexion was limited and abduction practically abolished. Real shortening two inches. A skiagram showed an ununited fracture and coxa vara. The fibrous bond of union was excised and two screws were driven from the trochanteric surface through into the head. The operation had been successful in abolishing the pain and arresting the progress of the deformity.

Osteo-periostitis of the Upper End of the Femur of Uncertain Origin.—Mr. FAIRBANK.—There were thickening and tenderness at the upper extremity of the femur, and the child, a girl, aged 5 years, limped slightly. The skiagrams suggested an inflammatory lesion, not a new growth. The Wassermann reaction was negative and mercury and iodides had been given without effect.

Two Sisters with Deformity of Bones and Splenomegaly.—Dr. F. LANGMEAD.—The first child, aged 6 years 5 months, showed skeletal changes

closely resembling those of rickets. The spleen extended downwards as far as the anterior superior spine of the ilium and filled the left side of the abdomen. The liver extended down an inch below the costal margin. In the second case, aged 5 years 4 months, the bony changes resembled those in the first, but had developed to a less degree. The spleen was also enlarged, but less so, reaching about an inch below the costal margin. The chief points of interest were: (1) The progressive character, both of the skeletal changes and the splenomegaly; and (2) the fact that this occurred at an age when the usual period for active rickets was over.

Dactylar Deformity from Amniotic Bands.—Dr. F. G. CROOKSHANK. —Skiagrams showed well the bony deformities and less clearly the multiple constrictions of the fingers of a boy, from whose hands at birth the mother stated the doctor had removed a number of “strings like wires.”

Philadelphia Pediatric Society.

November the 11th, 1913, THEODORE LE BOUTILLIER, M.D., President.

Congenital Malformation.—Dr. ALICE WELD TALLANT reported the case of a baby born in the out-patient maternity service of the Woman's Medical College of Pennsylvania. It was the eighth child of a healthy-appearing Italian woman, aged 38 years; the other children had been normal and there was no history of syphilis.

The more conspicuous deformities were double hare-lip and cleft palate and congenital umbilical hernia. The hernia was nearly half the size of the child's head, and the sac contained coils of intestine. To the left of the hernia and attached to it was a dark red, tongue-shaped mass, suggesting spleen in appearance. The cord, which, about two inches from the child's body, had dwindled to two vessels without any Whartonian jelly, was attached between the hernia and this mass; its entire length was 25 in. The vessels ruptured close to the sac, but no bleeding followed. Other malformations were a cleft sternum, a supernumerary digit attached to the left little finger, hypospadias and undescended testicles.

The baby was operated on by Dr. H. C. Deaver before it was fifteen hours old. After the incision of the sac and the breaking-up of adhesions which had formed between it and the intestines, the hernia and accompanying mass were replaced in the abdominal cavity, which was closed in the usual way. The child recovered from the immediate effects of the operation, but died thirty hours later. It had passed three meconium stools and showed no signs of obstruction, but had a very variable temperature—from 96.4° F. to 103.8° F.

Autopsy showed as other abnormalities the absence of the great omentum and the shortening of the lesser omentum, pulling the stomach up and allowing the formation of adhesions between it and the retroperitoneum. The left adrenal was four times the natural size and the left kidney larger than the right. The right common iliac artery was small, and the right hypogastric absent. The mass, which had protruded beside the hernia,

was found to be a vascular tuft composed largely of convoluted blood-vessels.

Such hernias occur about once in 5000 cases. There may be actual defect in the abdominal wall, and the sac may contain the liver, stomach, spleen, pancreas, kidney, or even the heart, in addition to the intestines. The ætiology may be mechanical, or disease may be a factor. More often there is arrest of development in the second month or earlier, before the closure of the abdominal wall. Except when the sac is small, the outcome of an operation is likely to be unsatisfactory; while without operation the child usually dies of rupture of the sac, strangulation of the hernia, or peritonitis.

Unilateral Hypertrophy of the Leg.—Dr. JOHN SPEESE reported two cases of congenital unilateral hypertrophy. The first case occurred in a boy, aged 5 years, in whom hypertrophy of the frontal and temporal bones was noted soon after birth. The growth increased progressively until a distinct protrusion is now present, and the circumference of the skull on the affected side is 2 cm. greater than the opposite half. The hypertrophy is entirely confined to the bone, the soft parts being uninvolved. This case is of particular interest, because instances of this type are usually found in patients who are mentally deficient and have other congenital defects, whereas this boy is entirely normal in every other respect. The second case was a girl, aged 10 years. Her parents state that an enlargement of the great toe of the right foot was noted two months after birth, continuing uninterruptedly since. Examination discloses an overgrowth of the soft tissues about the knee, calf, and great toe. The right leg is one inch longer than the left, and the knee and calf are two inches greater in circumference. From toe to heel the right side is one inch larger than on the left side, due to overgrowth of the toe, which is several times greater than the left toe. Amputation of the toe was performed, and sections of the soft tissues show overgrowth of the fatty tissue and rarefaction of the bone structure. The hyperplasia about knee and calf is also presumably due to overgrowth of the fatty tissue. The ætiology is not clear, as this patient is also normal in every other particular, and has shown no recurrence of the hypertrophy since operation, as has been reported in several instances.

Bacteriological Diagnosis of Alimentary Disease.—Dr. RALPH VINCENT, of London, by invitation, gave a lantern demonstration of photomicrographs illustrating the bacteriological diagnosis of alimentary disease in the infant and child. The study of the growth and action of organisms in milk in normal and abnormal conditions was essential to the comprehension of the biochemical processes occurring in the intestine. The organisms were classified according to their growth and action upon milk: (1) organisms producing lactic acid but not producing gas—*Streptococcus lacticus* and *Bacillus lacticus*; (2) organisms producing lactic acid, carbon dioxide and alcohol—colon group, *Bacillus acidi lactici*, *Bacillus lactis aerogenes*, *Bacillus coli communis*, etc.; (3) organisms growing in pasteurised milk but not in raw milk—*Bacillus putridus* and *Bacillus aerogenes capsulatus* (Welch); and (4) organisms growing in milk that has been boiled (212° F.) but not in raw milk—*Bacillus subtilis*, *Bacillus mesentericus*, etc. The governing condition in the intestine of the healthy infant was the growth and action of the *Streptococcus lacticus*. This organism was extraordinarily powerful in inhibiting and controlling the growth of all other

organisms. This was well seen when pure raw milk was incubated at 38° C. for from eight to twenty-four hours. As a rule this organism was found in practically pure culture. If the milk was pasteurised before incubation a wholly different microscopical picture was seen. The effect of an abnormal or unnatural diet was seen in the change in the intestinal flora. As the *Streptococcus lacticus* failed to act owing to the abnormality of the media, so the other organisms came into action, with the result that unhealthy or pathological conditions arose in the alimentary canal. Dr. Vincent then discussed the bacteriological diagnosis by means of direct microscopical examination of the intestinal dejecta and of cultures in milk made from the dejecta. The number and prominence, or otherwise, of the colon organisms constituted a valuable diagnostic criterion, and Dr. Vincent had designed a method of differential staining by which the colon organisms were stained light blue and the lactic organisms a deep purple.

Fat in Moist Fæces.—Dr. GORDON J. SAXON, by invitation, demonstrated a new method for the differentiation of fat, fatty acid and neutral fats in moist fæces.

Abstracts from Current Literature.

Medicine.

A case of ankylostoma anæmia (*Osp. d. Bamb. di Milan.*, 1913, 1, p. 169).—G. B. Grassi records a fatal case in a boy, aged 4½ years. His symptoms were loss of flesh and increasing pallor of the skin for two months, continual fever and night-sweats. Blood examination on admission to hospital showed hæmoglobin, 18 per cent.; red cells, 1,600,000; white cells, 14,000. Differential count: polymorphs, 40 per cent.; lymphocytes, 32 per cent.; large mononuclears, 1 per cent.; eosinophiles, 25 per cent.; transitionals, 2 per cent. No nucleated red cells nor myelocytes. Death occurred eight days after admission. The necropsy showed ankylostomata in the intestine, especially in the duodenum, and numerous hæmorrhagic points in the mucosa. Histologically there was a chronic inflammation of the intestinal wall, in which the mucosa, submucosa, and to a less extent the muscular coat were involved. The Malpighian corpuscles of the spleen showed an over-production of leucocytes, which were mainly mononuclears of medium size. The spleen-pulp contained an unusual amount of blood, which did not contain any eosinophiles but a large number of polymorphs, many of which were loaded with pigment.

J. D. ROLLESTON.

Barlow's disease in a breast-fed child (*Rev. de med. y. Hig. práct.*, 1913, 1, p. 688).—C. Morelli records a case in a male infant, aged 7 months. Three months previously the mother had had facial erysipelas, and since then the child had suffered from intestinal disturbance. He had recently vomited and been feverish. On examination the upper extremities of the left femur and right tibia were very tender, and showed a fusiform swelling. Pin-point hæmorrhages were present in the gums, and ecchymoses of various sizes were scattered over the body. Breast-feeding was continued, and lemon-juice was given between the feeds twice a day. Injections of peptone

as recommended by Nobécourt were also given, and complete recovery took place in 1½ months.

J. D. ROLLESTON.

Banti's disease in childhood (*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 254).—A. D'Espine describes two personal cases and the others in the literature of this disease, and concludes that (1) perhaps some of the cases not noticed until adult age have really started in infancy. (2) A certain number of cases of splenomegaly associated with rachitis, and considered by some as due to syphilis, are "*formes frustes*" of Banti's disease. (3) Spontaneous cure is possible. (4) Infection is not the cause of the disease, as inoculation of a monkey with splenic tissue proved negative.

F. R. B. ATKINSON.

The thermic curve in infantile Leishmaniosis (*La Pediatria*, 1913, xxi, p. 481).—G. Ceronia records twelve cases with temperature charts to show that the fever is an anaphylactic phenomenon. There is a continual and gradual production of anaphylotoxin by the elaboration of albuminoid bodies derived from the destruction of the parasites localised in various organs. In other words, by the joining of antibodies with antigen in the presence of complement, disintegration of the antigen occurs and develops a pyrogenic substance.

VINCENT DICKINSON.

Infantile kala-azar (*La Med. de los Niños*, 1913, xiii, p. 189).—Pittaluga gives a report on a disease endemic among the children of Tortosa and the neighbouring villages on the Spanish Mediterranean coast. Malaria is rife there, but is differentiated from the disease which the local practitioners have regarded as cases of "splenic leukæmia," pseudo-leukæmia or Hodgkin's disease. In many of the children noma of the mouth is an intercurrent or terminal complication. The course is subacute and of variable duration, from a few weeks to a few months, and nearly all the children die within a year of their first signs of illness. In the last six years among a population of 2000 inhabitants there have been in children aged from six months to six years 47 deaths registered as splenic leukæmia, etc. In a typical case where death occurred after noma of the mouth, Pittaluga found a great number of Leishman's parasites in the spleen-pulp—some of the parasites were intra-cellular, some in small groups, and some in the intercellular plasma. He has not hitherto found the flagellated forms in any of his preparations, but in cultures he has obtained flagellated forms exactly like *Leptomonas* and *Crithidia*, which on inoculation, especially in dogs, gave rise to Leishmaniosis. There can be no doubt, he concludes, that infantile kala-azar, due to Leishman's parasite, is endemic on the Spanish Mediterranean littoral. He inclines to the view that fleas may be the agent conveying the parasite from the Leishmaniosis in dogs to man.

M. D. EDER.

The pulse and arterial tension of the child (*Gaz. des Hôp.*, 1913, lxxxvi, p. 837).—P. Balard.—Koessler, in 1912, applied the oscillometric sphygmomanometer to the study of maximal and minimal pressures in infants, and showed that in the normal child both maximum and minimum arterial pressure increased progressively up to adult life. The author finds the pulse-rate diminishes for the first three days after birth and then continues unaltered for the first year. About the third year it rapidly slows and continues to do so up to adult life. It is more rapid in girls than boys up to the age of eleven years. At birth the maximum and minimum blood-

pressures are about 40 and 25 mm. respectively; they increase till by the tenth day they are about 75 and 45 mm.; thenceforward they gradually increase till adult life.

J. PORTER PARKINSON.

Murmurs of no significance in the præcordial region of children and young persons (*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 377).—**C. Hochsinger**.—Murmurs of this kind are more frequent in children and young persons than in older individuals: they first occur with any frequency after the third year, and most frequently of all between the tenth and fourteenth years. They can be divided into those which are cardio-pulmonary, and those which arise within the heart, the so-called accidental or functional cardiac murmurs. The former disappear on expiratory holding of the breath; the latter are not affected by respiration. The latter form of murmur does not occur in infants or very young children, and the former very rarely. The murmur called by Schlieps atonic cardiac murmur is not the same as that called accidental or functional, but refers to that form of murmur that occurs in conditions of juvenile cardiac atony (lowered blood-pressure, bad filling of the arteries, dilatation from weakness). This murmur is of importance, but is very rare.

F. R. B. ATKINSON.

Congenital familial dextrocardia (*Journ. Amer. Med. Assoc.*, 1913, LX, p. 1064).—**S. Neuhof** reports the occurrence of dextrocardia with transposition of the liver and spleen in a brother and sister. Only one other instance of this anomaly occurring in members of the same family seems to have been recorded. In the present instance the girl died of tuberculosis (? at what age). The brother is alive and aged 26. The cardiac area is normal to percussion, but electro-cardiograms show interesting features. In lead 1 (from right arm to left arm) the position of the summits P, R, T are exactly the inverse of the normal. Such a condition is found only in congenital cardiac transposition, and may, therefore, be used to differentiate it from displacements due to pleuritic effusions, adhesions, tumours, etc. Leads 2 (from right arm to left leg) and 3 (from left arm to left leg) also show changes typical of dextrocardia, all the summits being higher in the third lead than in the second.

T. R. WHIPHAM.

Persistent ductus Botalli and its diagnosis by the orthodiagraph (*Amer. Journ. Med. Sci.*, 1913, CXLV, p. 543).—**H. Wessler** and **M. H. Bass** give a review of the literature on the diagnosis of patent ductus and a careful study of five cases. There are good reproductions of their orthodiagraphic figures and diagrams. They conclude, in agreement with other observers, that in a case of pure patent ductus one need not expect enlargement of the heart. They discuss the differential diagnosis of this class of congenital heart disease, and lay emphasis on the help that may be obtained by observing the heart in action by skiagraphy, noting that the marked pulsation in the shadow corresponding to Gerhardt's sign is a most suggestive feature.

REGINALD MILLER.

Early obliteration of the ductus arteriosus (*Journ. de méd. de Bordeaux*, 1913, LXXXIV, p. 216).—**Lefour** and **Balard** report a curious case from a syphilitic infant which died at the age of 8 days of jaundice and purpura. The ductus is usually not completely obliterated until the thirtieth day, which obliteration is produced by stretching or twisting, assisted by a

proliferation of the tunica intima. In their specimen, which is well shown in a picture, the ductus was found to be dilated except at its extremities, where it was narrowed. Its dilated portion was full of clot, which was limited to this part, and appeared to be the cause of the obliteration of the canal at this early date.

REGINALD MILLER.

A case of cardiac malformation with multiple anomalies of the circulatory system (*Arch. des mal. du cœur*, 1913, VI, p. 720).—**L. Rivet** and **L. Girard** record the case of a female infant whose mother was tuberculous and father was alcoholic. Their two other children were healthy. Cyanosis was present at birth, and persisted till death, twenty-five days later. The necropsy showed a single ventricle, an incompletely divided auricle with inversion of the venous trunks, obliteration of the pulmonary artery at its orifice, persistence of the ductus arteriosus, and a common trunk for the pulmonary veins ending in the liver instead of in the auricle, and anastomosing with the portal veins and inferior vena cava.

J. D. ROLLESTON.

Localisation of Spirochæta pallida in the heart-muscle in congenital syphilis (*Journ. Amer. Med. Assoc.*, 1912, LVIII, p. 689).—**A. Warthin** and **E. J. Snyder** report two interesting cases of congenital syphilis in which spirochætes were found in the heart-muscle only. In both cases translucent nodules were present in the heart-muscle, showing pale degeneration of muscle-fibre, epithelioid proliferation of the stroma, cell-infiltration and fatty degeneration in sections stained by Levaditi's method, numerous spirochætes were found in these nodules, but no spirochætes nor histological lesions of syphilis in any other organ. The skin presented cutaneous syphilides, but was not examined for spirochætes. One infant was two months old, the other eight days. The authors remark that the absence of spirochætes in the liver, lungs and spleen is unusual. They suggest that the heart-muscle is a place of predilection for the multiplication of spirochætes.

C. F. MARSHALL.

Course, prognosis and treatment of endocarditis in children (*Amer. Journ. Obst.*, 1912, LXVI, p. 478).—**W. C. Calhoun** reviews the subject of chronic endocarditis in children. He points out its intimate connection with rheumatism, and lays stress upon the mode of life that these patients should adopt with a view to preventing further rheumatic attacks and strengthening the heart as much as possible. He holds that in chronic cases the nitrogenous and carbohydrate constituents of the diet should be cut down, red meats not being allowed more than three times a week. He is, however, less strict on the subject of limitation of exercise, merely warning against too strenuous play.

REGINALD MILLER.

Acute endocarditis in children (*Journ. de Méd. de Paris*, 1913, XXXIII, p. 258).—**P. Nobécourt**.—Acute endocarditis is common in children, but rare under three years old. It is always infective in origin, generally simple, but occasionally malignant in nature. Sometimes it appears to be idiopathic, but often adenoids or enlarged tonsils show signs of the entrance of infection, or rheumatism is present in one of its numerous "*formes frustes*." Rheumatism is the commonest cause; the curve of acute endocarditis follows that of rheumatism, and with it is to be placed chorea. Scarlet fever accounts for 4-5 per cent. of cases; measles, smallpox, diphtheria, typhoid, erysipelas,

mumps, gonorrhœa, pneumonia, osteomyelitis, stomatitis also cause some cases. Tuberculous acute endocarditis is rare. Heredity seems to predispose. Endocarditis may be the direct result of an illness or be due to a secondary infection. The microbes are very numerous, and the results vary with them and also with their virulence. The symptoms of acute endocarditis are few. The temperature is often not affected or it may be slightly irregular; there is rarely palpitation, pain, dyspnœa or rapidity of the pulse. Inspection and palpation teach us nothing. Percussion shows an increase of the deep dullness. On auscultation there is dulling of the first sound, like that which is produced by shutting a door cased in indiarubber. If the aortic valve be affected the second aortic sound may also have this character. This may last a fortnight and then a murmur develops, or the sound may become normal again. The murmur is at first soft and low, not well propagated to the axilla and not heard at the back. Sometimes it is heard along the right edge of the sternum. The murmur may grow gradually louder, or it may disappear and reappear in some weeks or months. One must not, then, hasten to declare an acute endocarditis cured. A fresh rheumatic attack may re-start the process over again. In acute malignant endocarditis general symptoms such as shivering, dyspnœa, vomiting, fever, outweigh the local signs. The general condition is grave, and may resemble typhoid fever, meningitis, etc. Subacute cases are more insidious, with wasting, pallor, and occasional fever. A variable murmur is present as a rule.

J. PORTER PARKINSON.

Acute endo-myocarditis in an infant (*Le nourisson*, 1913, I, p. 291).—**A. B. Marfan and F. Saint-Girons**.—A male infant, aged 18 months, was admitted to hospital for broncho-pneumonia and died a fortnight later. No cardiac signs were found during life. Post mortem, an adherent clot was seen on the tricuspid valve, which showed recent inflammatory nodules, and similar nodules were present on the mitral valve. The myocardium was pale. There were numerous pulmonary emboli. Allusion is made to a similar case reported by Hawkins in the *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1910, VII, p. 399.

J. D. ROLLESTON.

A case of septicopyæmia (*Med. Record*, 1913, LXXXIII, p. 711).—**T. G. Orr** reports a case of malignant endocarditis in a child aged only 2 years and 10 months, the primary source of infection being a septic finger. Clinically, the illness was associated with an erythematous rash, enlargement of the spleen and infarction. The diagnosis was verified by an autopsy, but the organism, though visible in sections of the tissues, was not isolated. There was no history of any previous illnesses or heart disease in this case.

REGINALD MILLER.

Chronic infective endocarditis (*Arch. of Ped.*, 1913, XXX, p. 328).—**E. Cautley** remarks upon the comparative rarity of infective endocarditis during childhood, in spite of the frequent occurrence of simple valvulitis at this age. Two cases of chronic infective endocarditis are quoted in children of 8 and 18 years of age. In both there was a fatal termination after about eight months of illness, and in neither was the infecting organism determined with certainty. Four other cases of a less chronic type are also mentioned.

REGINALD MILLER.

Asystole in children (*Journ. de Méd. de Paris*, 1913, XXXIII, p. 795).—**P. Nobécourt**.—This is due to insufficiency of the myocardium or to

causes increasing the peripheral resistance. The symptoms differ from those in the adult. Cerebral troubles are rare and cyanosis not so marked, the skin being rather pale and anæmic-looking. Œdema is slight or wanting. Ascites and enlargement of the liver are common. The urine is scanty, high-coloured, and rich in urates. There is dyspnoea but rarely orthopnoea, but there is rarely œdema of the lungs or bronchitis; more commonly there is slight dulness and weak breathing at one base due to collapse from embarrassment of the diaphragm owing to the enlarged liver. There is often impairment and harsh breathing at the angle of the left scapula due to compression by the enlarged heart. Congestion of the lung may lead to generalised bronchitis, often specially persistent at the apices, and may raise a suspicion of tuberculosis. Dry or sero-fibrinous pleurisy often develops, sometimes owing to a subpleural infarct. The pulse is frequent, unequal and irregular. The arterial pressure is lowered. The heart is transversely enlarged, the sounds are feeble and murmurs may be present, due to dilatation or valvular disease. The jugular veins are distended. The evolution of these symptoms may be rapid or slow, and they may be progressive or show intervals of improvement. The author attaches great importance in suspected cases of early asystole to daily weighing, a sudden increase of weight due to a latent œdema being one of the earliest signs of asystole; increase in the size of the liver is another early sign. It is in the early stages that treatment is most efficacious.

J. PORTER PARKINSON.

Myocardial syndromes in the course of acute infections in children (*Journ. de Méd. de Paris*, 1913, xxxiii, p. 459).—P. Nobécourt distinguishes two varieties—(1) latent, (2) cardiac. In the first variety there are no subjective phenomena, but on examination there is variation in the size and rhythm of the heart and in the blood-pressure, and slight enlargement of the liver. This myocardial change may or may not be associated with endo- or pericarditis. The heart-sounds become weakened, especially at the base, or the second pulmonary sound may be accentuated. There is sometimes a cantering action; finally a systolic apical murmur may appear, due to a shortening of the chordæ tendineæ. The cardiac dilatation may be temporary or persistent and is very apt to recur. With it there may be rapid or slow action, the latter being chiefly seen in convalescence from typhoid fever, pneumonia, diphtheria, etc., and it may be accompanied by various kinds of arrhythmia and low tension. In the cardiac forms there are fever, dyspnoea, general œdema, congestion of the base of the lungs, and sometimes subcutaneous nodules. Præcordial pain may be present, and the heart is dilated and the liver-dulness increased. The heart-sounds are feeble but the second pulmonary accentuated. The pulse is rapid and irregular. This condition may last three or four months, or there may be rapid and sudden death in a few days. In the infectious fevers, excluding acute rheumatism, the myocardium is as a rule affected alone, but in rheumatism there is often peri- and endocarditis as well. In infectious fevers the patient becomes pale and cyanotic, with cold extremities, dyspnoea, feelings of suffocation and scanty urine. The heart's action is rapid as a rule, the pulse often irregular and of low pressure. The liver is enlarged and the bases of lungs congested. There is acute parenchymatous myocarditis, but not often interstitial changes except in protracted cases.

J. PORTER PARKINSON.

An instance of premature beats arising in the auriculo-ventricular bundle of a young child (*Amer. Journ. Med. Sci.*, 1913, cxlv, p. 667).—

T. Lewis and H. W. Allen describe this condition in a child aged $4\frac{1}{2}$ years, and give polygraphic and electro-cardiographic curves of the condition.

F. R. B. ATKINSON.

Acute pericarditis in children (*Journ. de Méd. de Paris*, 1913, xxxiii, p. 383).—**P. Nobécourt**.—The frequency of pericarditis varies much with age. It is not uncommon in the newborn and under the first year; it diminishes till five or six years of age, and then increases in frequency up to the age of ten to fifteen years. The effusion in young children is generally purulent, but becomes serous in older ones. In infants it is often pyogenic from puerperal infection of the umbilical cord. Up to five years it is generally pneumococcal or pyogenic, secondary to bone disease, abscess, impetigo, sore throat, stomatitis or enteritis. It may also be due to acute specific fevers. Over seven years rheumatism is the most frequent cause, and less often chorea. Occasionally pericarditis may be tuberculous. The author discusses the diagnosis of the purulent varieties, which are so often latent and escape recognition.

J. PORTER PARKINSON.

Chronic pericarditis and pericardial adhesions in childhood (*Journ. de Méd. de Paris*, 1913, xxxiii, p. 719).—**P. Nobécourt**.—Chronic pericarditis is usually due to rheumatism or tuberculosis, but occasionally to syphilis. The rheumatic form is apt to be progressive owing to fresh attacks of the poison, and is always accompanied by endocarditis and by considerable enlargement of the heart due to myocarditis. The symptoms are dyspnoea, cardiac oppression, palpitation, oedema, enlargement of liver, oliguria, etc. A distinctive feature of the cardiogram is want of the pre-systolic wave due to auricular contraction. Tuberculous pericarditis may produce adhesion of the pericardium; the adjacent mediastinum is always implicated. The heart is rarely large and may be atrophied. The liver is always enlarged and there is often tuberculous peritonitis. Never forget to examine the pericardium in a child with ascites and a large liver.

J. PORTER PARKINSON.

Prognosis in cardiac disease in childhood (*Amer. Jour. Dis. Child.*, 1913, v, p. 104).—**C. Hunter Dunn** gives the immediate mortality of rheumatic cardiac disease as 20 per cent., and the mortality within ten years as 50 per cent. The mortality is chiefly seen during childhood; after young adult life is reached it is only 7 per cent. The chief cause of death in childhood is fresh rheumatic carditis leading to heart failure. The particular valvular defect is of small moment with the exception of aortic disease, which appears to be a particularly fatal lesion in childhood. Such patients as survive childhood show a remarkable freedom from cardiac disability; the majority can live normal active lives. Valvular disease acquired in adult life leads to more marked disability.

REGINALD MILLER.

Rheumatism in childhood (*Practitioner*, 1913, xc, p. 389).—**F. J. Poynton**.—*Ætiology*: The virus, a diplococcus, can be transferred from mother to fœtus. Heredity is an important factor. The disease is not very rare under five years of age, but is exceptional during infancy. The avenue of infection is through the tonsils. Damp, poverty, insanitary homes favour the disease. *Pathology*: There are numerous focal lesions caused by the germ, and in these foci the micrococci are rapidly destroyed. The lesions, according to Coombs, Aschoff and others, contain characteristic cells.

The poison causes marked dilatation of the small blood-vessels and perivascular changes. The connective tissues show a peculiar gelatinous swelling. Suppuration does not occur. *Symptomatology*: In childhood, as compared with adults, the manifestations are most varied and numerous, the articular lesions are less severe, the heart affections most frequent, as also nervous symptoms and subcutaneous nodules, anæmia most marked, sweating less frequent, hyperpyrexia very rare. Chorea is often associated with the early stages of mitral stenosis. *Treatment*: Salicylate of soda is not such a valuable drug as generally believed. Vaccines and serum have given excellent results in some cases, but in others they have failed.

F. R. B. ATKINSON.

Defective development from arthritis in early life (*Amer. Journ. Med. Sci.*, 1912, cXLIV, p. 469).—**G. Dock** details a good example of the state of growth reached at the age of twenty-four years in the case of a boy who had suffered from chronic arthritis without heart lesion since the age of eleven years. The case appeared to conform to the type known as rheumatoid arthritis. Good photographic reproductions are given showing the patient and a radiogram of one hand. Measurements, compared to normal, are also included.

REGINALD MILLER.

Chronic tubercular articular rheumatism, simulating Still's disease (*La Pediatria*, 1913, xxi, p. 401).—**O. Cozzolino** publishes details of this case of a girl, aged 7 years. He discusses the question whether Still's disease can be considered a pathological entity and comes to a negative conclusion. Improvement followed the application of Bayer's salen-alcohol, the pains disappearing in a few days, the swelling, however, remaining unaltered. Iodarsol was also administered and heliotherapy employed. The child gained $1\frac{1}{2}$ kgrm. in two months, and the appetite returned. The articular swelling persisted together with the spinal and nuchal rigidity, and the temperature remained above normal.

VINCENT DICKINSON.

Rheumatic nodules in a case of chorea (*Arch. de méd. des Enf.*, 1913, xvi, p. 522).—**J. C. Navarro** records a case of paralytic chorea, with multiple nodules and aortic regurgitation. It is interesting to note that he states that this is the first example of rheumatic nodules which he has seen. He quotes Frorips as the first to describe them (1843).

REGINALD MILLER.

Treatment.

Treatment of scarlet fever with intravenous injections of neo-salvarsan (*Arch. of Pediat.*, 1913, xxx, p. 352).—**L. Fischer** treated five cases of septic scarlet fever, aged from $1\frac{1}{2}$ to 9 years, with intravenous injections of neo-salvarsan. The dose was 0.2 gm. dissolved in 40 c.c. of sterile water. Wassermann's reaction was negative in 3, probably positive in 1, and in 1 no report was made. No reaction such as acute febrile attack, shock, or rash followed the injections. Three died, 1 recovered, and 1 was still in hospital (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, x, pp. 187-188.)

J. D. ROLLESTON.

Salvarsan in scarlet fever (*Verhandl. d. Deutsch. Kongr. f. inn. Med.*, 1913, xxx, p. 137).—**Jochmann** treated 117 cases of scarlet fever in the

Rudolf Virchow Hospital partly with intravenous and partly with intramuscular injections. The dose was 0.1 gm. to 10 kilos of body-weight, and no more than two injections were given in children: 109 received salvarsan, and 8 neo-salvarsan. Fifty-eight of the salvarsan cases showed no after-effects, while 51 one to two hours after injection had a rise of temperature of 1° or 2° C., vomited once or twice and had diarrhoea. The symptoms subsided in four to six hours. Jochmann, as the result of his experience, recommends salvarsan in severe toxic scarlet fever and in necrotic angina. It is unnecessary in the mild cases, especially as it does not prevent complications. He deprecates the use of neo-salvarsan, as five of the eight cases treated with it showed signs of severe intoxication. In the subsequent discussion **Schreiber** spoke highly of the local use of salvarsan in the necrotic angina of scarlet fever (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, pp. 187 and 543).

J. D. ROLLESTON.

New aspects of the serum treatment of diphtheria (*'Prag. med. Woch.'* 1913, XXXVIII, p. 565).—**A. Ganghofner** recommends intramuscular in preference to subcutaneous injections. Intramuscular injection offers the advantage of a much more rapid absorption of the serum, is just as readily carried out, and is less painful than the subcutaneous method. In mild cases Ganghofner gives 1500 units, severer cases, including those in which the larynx is slightly affected, receive 3000 units, and in the severest faucial and laryngeal cases he gives 6000 to 12,000 units. When an individual who has already been treated with horse-serum for diphtheria develops a second attack it is advisable in order to avoid anaphylaxis to use the serum of some other animal, but if one is compelled to use horse-serum, a few drops should first be given subcutaneously, and a few hours later the full dose should be given intramuscularly.

J. D. ROLLESTON.

Schiötz method of ridding diphtheria cases and carriers of diphtheria bacilli (*'Journ. Amer. Med. Assoc.'* 1913, LXI, p. 26).—**F. L. Wright** finds that spraying the nose and throat with a twenty-four-hour culture in plain bouillon of the *Staphylococcus pyogenes aureus* is very efficacious in ridding the throat of diphtheria bacilli. The method was used in the New York State Agricultural and Industrial School, with the result that in diphtheria cases the average time of isolation was reduced from 32 days with the old methods to 22 days, and in the case of carriers from 34 to 11 days. The writer is of opinion that the method is absolutely innocuous.

T. R. WHIPHAM.

The treatment of diphtheria carriers (*'Journ. Amer. Med. Assoc.'* 1913, LXI, p. 1027).—**H. Albert** details the various methods which have been advocated for ridding diphtheria carriers of bacilli. He considers that the organisms are harboured chiefly in the crypts of the tonsils, and has obtained the best results by treating the crypts with a solution of silver nitrate (5 to 10 per cent.), applied by means of a thin flexible applicator, combined with a mild alkaline and antiseptic spray for the nasal cavity, and 1 per cent. solution of hydrogen peroxide as a mouth-wash and gargle.

T. R. WHIPHAM.

The staphylococcus spray treatment of diphtheria carriers (*'Journ. Amer. Med. Assoc.'* 1913, LX, p. 1876).—**A. M. Alden** advocates the use of the staphylococcus spray to the throats of diphtheria carriers. The culture

used is a composite one made by mixing equal portions of three different strains of *Staphylococcus pyogenes aureus*, isolated from throat cultures. These are grown on agar and afterwards transferred to broth. The material sent out is 30 c.c. of an eighteen-hour broth culture grown at 37.5° C., and is enclosed in a cylindrical bottle covered with a rubber cap and sealed with paraffin. Some of the culture is poured into a sterilised atomiser and the throat and nasal passages are then well sprayed. This is repeated at least once a day until two consecutive cultures made at intervals of twenty-four hours are negative. The author tried the treatment on sixteen cases in which diphtheria bacilli were present for at least four weeks, and in fifteen the throat was free from specific organisms in periods varying from two to eight days. The number of sprayings necessary varied from two to twelve. In one case the treatment failed and the patient was released by a negative virulence test. Possibly the failure was due to the culture having become inactive or to defective application. The only complications of the treatment observed were slight oedema of the face, increased nasal catarrh, sore throat and headache.

T. R. WHIPHAM.

Tonsillitis following use of staphylococcus spray (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 393).—**Clara M. Davis** reports the case of a school-girl, aged 18 years, who a fortnight after an operation for deflected nasal septum was found to be suffering from diphtheria. Bacilli being still present sixteen days later she was given a pure culture of *Staphylococcus aureus* emulsified with sterile normal salt solution and directed to spray the nose and throat three times a day. On the following day she had a slight chill and sore throat. The temperature rose and there was a profuse nasal discharge. The throat and nose were free from membrane, but the tonsils were much swollen and covered with discrete yellow spots and the cervical glands became much enlarged. One-grain "broken doses" of calomel and 5-gr. doses of aspirin every three hours were ordered. The temperature and pulse-rate steadily dropped and recovery was uneventful, but slow. The cervical glands were enlarged and tender for about ten days. The nasal discharge continued profuse during this time, and about five days after the beginning of the attack there was some swelling of the uvula. The patient felt much sicker (*sic*) during the attack of tonsillitis than during the initial attack of diphtheria. Cultures from the throat and nose showed abundant staphylococcus growth with a few diphtheria bacilli. The latter subsequently disappeared, but pneumococci and streptococci were present.

T. R. WHIPHAM.

Lactic acid bacillus spray for diphtheria (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 392).—**H. B. Wood** proposes the use of a lactic acid bacillus spray for diphtheritic throats. The organism is not foreign to man and is not pathogenic. A one- or two-day culture on agar is washed off in sterile normal salt solution and used in a sterile atomizer. Live organisms are required, hence no antiseptic must be used in the spray or on the mucous membrane. The author has employed the solution with success in a few cases which after the administration of antitoxin and the daily local application of silver nitrate, phenols and iodine still showed the presence of bacilli, and suggests that it may prove useful not only in the case of diphtheria carriers and during convalescence, but also in the treatment of the disease. Practitioners in the country, if without antitoxin or antiseptics, may perhaps find some advantage in swabbing or douching the nose and throat with ordinary sour milk.

T. R. WHIPHAM.

Whooping-cough (*Wien. klin. Rundschau*, 1913, xxvii, p. 230).—**Singer** regards the virus as unknown, and the vaccines prepared by Manicatide or Bordet and Gengou are valueless. He relies upon general hygienic measures, daily warm baths, good ventilation and warmth in the room together with "Pilka," the trade name for a dialysis of herbæ thymi and pingui culæ. The dialysis is prepared from fresh extracts, and Singer believes that his good results may be attributed to the special mode of preparation.

M. D. EDER.

Treatment of severe intestinal hæmorrhage in typhoid fever by intravenous injection of human blood (*Paris méd.*, 1912-13, II, p. 150).

—**Olivier**.—A boy, aged 15 years, suffering from typhoid fever, had repeated intestinal hæmorrhage which was not checked by gelatin, antidiphtheritic serum, or calcium chloride: 30 c.c. of blood were taken from the mother's median basilic vein in a warmed and paraffined syringe and injected at once into the child's media cephalic. The hæmorrhage ceased, and the same evening the stool contained clotted blood. Recovery took place.

J. D. ROLLESTON.

Results with salvarsan in hereditary syphilis (*Am. Journ. Dis. Child.*, 1913, vi, p. 174).—**L. E. Holt** and **A. Brown**.—From November, 1911, to January, 1913, thirty-four cases of hereditary syphilis were treated in the Babies' Hospital with intravenous injections of salvarsan alone. The

injections were all made under anæsthesia at the bend of the elbow. More recently the authors have found the scalp veins such as the posterior auricular or one of the branches of the temporal more suitable. The ages of the children ranged from one month to four and a half years. The doses for children up to eight months was .05 grm. salvarsan or .075 grm. neo-salvarsan, and after that age .10 to .20 grm. salvarsan or .15 and .30 grm. of neo-salvarsan. The doses were repeated tentatively, the second dose being given two weeks after the first, and subsequent doses at intervals of from one to two months according to the result of the Wassermann test. All gave a positive Wassermann reaction except one child who had been regularly treated with mercurial inunctions for three months. In sixteen patients in whom frequent Wassermann reactions were made the average date of the disappearance of the reaction was three and a half months. The latest report on the cases was that six were positive and ten were negative, the latter having been under observation for an average of ten months. The effect of salvarsan was most marked on the skin lesions. Seventeen died, eleven from intercurrent disease, seven being from broncho-pneumonia and four from gastro-enteritis; one died from acute peritonitis. Syphilis itself caused five deaths, and multiple neuritis, probably due to the arsenic, one death. No complete necropsy was held in the last case, but examination of the median and musculo-spiral nerves was negative. J. D. ROLLESTON.

Treatment with salvarsan in late congenital syphilis (*Am. Journ. Dis. Child.*, 1913, vi, p. 187).—**G. S. Strathy** and **G. A. Campbell** treated eighteen cases, only three of whom were under 5 years of age, the rest being aged from 6 to 24 years. With the exception of a mentally deficient child, who was injected intramuscularly, the intravenous method was used. The dose varied with the weight, 150 lb. being taken as the average male adult weight, and 0.6 grm. salvarsan and 0.9 grm. neo-salvarsan as average doses for that weight. Salvarsan was dissolved in 300 c.c. of distilled water, and

neo-salvarsan in 150 c.c. 1 c.c. of the latter and 2 c.c. of the former were given for each pound of weight of the patient. All improved clinically. Gummata, periostitis and ulcers disappeared rapidly. Keratitis, which was present in eight cases, healed more rapidly than under mixed treatment. The results were better than those obtained by mercury, which had already been used with little benefit in about half the cases. In spite of repeated doses, only five gave a negative Wassermann reaction after treatment. The younger the child, the more quickly did the reaction become negative. Nearly all the cases were treated in the out-patient department, and no bad effects resulted.

J. D. ROLLESTON.

Treatment of pyodermia by Ziehl's fluid (*'La Pediatria,'* 1913, xxi, p. 525).—**E. Palmagiani** uses the following: Fuchsin 1, absolute alcohol 10, pure phenol 5, distilled water 100. The infected skin was painted over daily. The results were good, the impetigo ceased spreading, the crusts dried up, and after six to ten days dropped off, leaving healthy skin.

VINCENT DICKINSON.

Splenic leukæmia and radiotherapy (*'Bull. Soc. Sci. méd. de Bucarest,'* 1911–12, p. 98).—**A. Craciuneano** records a case in a boy, aged 14 years, who had been suffering for two years from febrile attacks followed by epistaxis, and for one year from progressive enlargement of the spleen. Blood examination: White cells, 190,000; hæmoglobin 55 per cent.; red cells, 3,600,000. Differential count: mononuclears, large and small, 50 per cent.; polymorphs, 32 per cent.; transitionals, 17 per cent. Surgical interference was deemed unsuitable, and fifteen applications of X-ray treatment were given, one every six days. The spleen diminished to a third of its former size, and the blood-count was as follows: white cells, 28,080; red cells, 3,908,000; hæmoglobin, 80 per cent. Differential count: polymorphs, 77 per cent.; lymphocytes, 15 per cent.; transitionals, 7 per cent.

J. D. ROLLESTON.

A case of hæmophilia treated with repeated injections of blood-serum (*'Journ. Amer. Med. Assoc.,'* 1913, lxi, p. 121).—**F. E. Clough** reports the case of a girl, aged 14 years, who had a negative family history relative to hæmophilia. No history of hæmophilia developed in this case until the patient reached the age of eleven. At that time she had her tonsils and some adenoids removed. Following this operation there was profuse bleeding from the back of the pharynx that almost exsanguinated the patient. Five days later bleeding again occurred from the same site. One year after this she started to menstruate, the first period lasting two weeks. The twenty-eight-day type was at once assumed, the flow lasting for ten or fifteen days. At first she was kept in bed, given ergot, stypticin, calcium chloride, gelatin and various other drugs without in any way influencing the course of the disease. Finally she was given 30 c.c. of horse-serum, with very favourable results. For the following three months the period lasted but three days each time. The next month she was sick for two weeks. Since that time she has had three injections of blood-serum obtained from her mother, each one being able to control the situation for three or four months. It is now four months since the last dose was given and her last period was prolonged for eighteen days. She will be given another injection this month. Whether it will be necessary to continue these injections remains to be seen.

T. R. WHIPHAM.

Treatment of hæmorrhagic disorders (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1277).—**T. B. Cooley** is of opinion that blood therapy of some kind is the best remedy for hæmorrhagic conditions. In hæmophilia blood-serum seems to have a specific action so far as checking the hæmorrhage is concerned. It may be used as a prophylactic measure, as well as to stop existing hæmorrhage. Fresh human serum is probably to be preferred. In purpura, melæna, and other toxic conditions, in which various blood elements have been shown to be lacking, none of the serums are always effective, and there are good theoretical and clinical reasons for believing that whole blood should be preferred, not only to stop hæmorrhage, but for a possible curative effect on the underlying disease condition. Transfusion is not really a difficult procedure. It is deserving of extended trial—not as a last resort, but as the first treatment in any of the hæmorrhage diseases of toxic nature.

T. R. WHIPHAM.

The "specific" use of salicylate in acute rheumatism (*Quart. Journ. Med.*, 1913, VI, p. 519).—**Reginald Miller** defines this as the use founded upon the assumption that salicylate has the power of diminishing the activity of the rheumatic infection. The article is not concerned with the truth of this conception, but with certain practical objections which have been raised against it. These are examined in the light of an analysis of a series of 124 rheumatic children under the care of Dr. D. B. Lees and all treated by salicylate. The following conclusions are reached: (1) That increasing the dose of salicylate does not imply increased absorption is disproved by analysing the urine of a series of cases under salicylate treatment. (2) That large doses are too prone to produce vomiting to be useful is only partially correct. More important factors in the production of vomiting are the method of administration and the type of case under treatment. Dilatation of the heart particularly predisposes to troublesome vomiting under salicylate, and this must be one limitation to the "specific" use of the drug in rheumatic carditis. (3) That acid intoxication is more the result of the method of administration than the size of the dose employed. (4) That in the series examined no death could be attributed to the dose employed. The largest dose used in any fatal case was 120 gr. daily. (5) That relapses are not so frequent in cases freely treated as in those in which small doses are employed. Nodule-formation is not a more frequent form of relapse than arthritis. Where nodules develop under large doses of salicylate they seem to signify little, if any, renewed general activity on the part of the infection.

AUTHOR'S ABSTRACT.

Scope of salicylate in the treatment of acute rheumatism (*Clin. Journ.*, 1913, XLII, p. 140).—**Reginald Miller** regards the anti-rheumatic action of salicylate as limited to diminishing the activity of the rheumatic infection, and does not think it capable of altering toxic parenchymatous changes except by tending to destroy the origin of the toxin. Thus salicylate is at its best where the symptoms are chiefly due to bacterial activity, as in arthritis; and is at a disadvantage where the symptoms are largely due to toxic changes. For these reasons large arthritic effusions, pericardial and pleural effusions, chronic (afebrile) chorea, myocardial degeneration are beyond the direct scope of the drug. In addition, in rheumatic heart-disease there is another limitation to the anti-rheumatic action of salicylate, namely, that it is where the heart is severely damaged,

particularly where it is much dilated, that salicylate is prone to produce vomiting. Thus the drug does not here get a good chance of combating what bacterial activity may be present.

AUTHOR'S ABSTRACT.

Reviews.

ORTHOPÆDICS IN MEDICAL PRACTICE. By Prof. ADOLF LORENZ and Dr. ALFRED SAXL. Translated by L. C. PEEL RITCHIE, Ch.M., M.D., F.R.C.S.Edin. London: John Bale, Sons & Danielsson, Ltd., 1913. Price 7s. 6d. net.

IN the presentation of such a large subject as orthopædics within the limits of 263 quarto pages, the authors of 'Orthopædics in Medical Practice' have cleverly omitted nearly all the usual features by which we recognise volumes dealing with this subject. A preliminary glance through the book assured us of this—perhaps it would be more accurate to say reassured us of this. The usual discussion as to the pathology of infantile palsy or infantile diplegia, ending in a hopeless attempt to reconcile opposing theories, was lacking; missing, too, were the usual illustrations of club-foot. It was, therefore, with a pleasant anticipation of interest that we settled down to see what two such masters have to say upon their subject, nor were we disappointed.

Orthopædics is here dealt with wholly from its clinical aspect—the effect which all abnormalities and deformities have upon the different systems of the body.

Chapters I to IV deal successively with the respiratory, circulatory, digestive and urinary systems, and are perhaps the most interesting in the book, as they deal with the subject in a manner wholly out of the common. For instance, take scoliosis, or "skoliosis," as the translator prefers to keep it. You might think that in a book with "orthopædics" for its title, the pathology, ætiology and treatment of the condition would have to be stolidly plodded through. Not at all; not a word about any of them. The authors pay you the compliment of supposing that you have already had a medical education. They deal, however, with the effect scoliosis has upon the different systems of the body in predisposing them to disease and its influence on the course and prognosis of such affections.

Chapter V is the longest, as it deals with the whole of the nervous system. It is divided conveniently into headings—peripheral nerves, spinal cord, brain and neuroses. The remaining chapter is on the locomotor system and includes the different forms and effects of arthritis. All the chapters are full of original observations and suggestive deductions, and fully repay the reading.

As in all faithful translations of German works, however, the reading is rendered unnecessarily wearisome by the constant use of persons' names placed after simple statements of fact, which the reader would be quite willing to accept. We are willing to believe, also, that certain German children may be "gibbose" and even possess "gibbosities," but we see no necessity to use these as clinical terms in English; hump-back is a term we all understand. German children can apparently pronate and supinate their feet both with facility and precision, but our own opinion is that English children as yet can only evert and invert them to a limited extent, and the

use of the former terms is not only unnecessary, but puzzling. Dr. Peel Ritchie will understand these remonstrances, and can be assured that we appreciate the fact that he has struggled against and overcome all the other pitfalls which await the feet of a translator, and has presented in a most acceptable form a book of exceptional interest.

D. C. L. F.

THE TUBERCULOSIS YEAR-BOOK AND SANATORIA ANNUAL. Edited by T. N. KELYNACK, M.D. Vol. i. London: John Bale, Sons & Danielsson, Ltd. Price 7s. 6d. net.

THIS is a valuable addition to the literature of tuberculosis. It contains a description of nearly all the sanatoria, chest hospitals and dispensaries with many excellent drawings of the various institutions. A list of all the tuberculosis officers in the British Isles is given, as well as a catalogue of the books on the subject published during the year and a description of the methods carried out throughout the British Isles and in English-speaking countries for combating the disease. In addition, there are numerous articles by various writers on different aspects of tuberculosis. Mention must also be made of the drawings of shelters both for rich and poor. The whole book is an invaluable work of reference, and should be in the possession of every medical officer of health and authority which has to deal with tuberculosis. This is the first year of its publication, and we congratulate the editor on its production and wish the work a prosperous career.

F. R. B. A.

CHAVASSE'S ADVICE TO A MOTHER ON THE MANAGEMENT OF HER CHILDREN. Revised by THOMAS DAVID LISTER, M.D. London, Physician, Royal Waterloo Hospital for Children and Women, Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, etc. London: J. & A. Churchill, 7, Great Marlborough Street, W. Price 1s. 6d. net.

THIS well-known publication has now reached its seventeenth edition—a fact which affords ample evidence of its continued popularity. The volume is divided into three sections, which deal respectively with infancy, childhood, and boyhood and girlhood. While the general scope of the work has remained much the same as in earlier editions, modern requirements have necessitated some re-arrangement of the matter and the re-writing of certain parts. The mother who takes an intelligent interest in the health and happiness of her children will be able to glean much valuable information on the management of children and on the treatment of various emergencies and accidents. The subject of infant feeding is very well discussed in a practical manner. Perhaps the symptomatology of diseases has been too fully dealt with, for it might lead to some parents trying to diagnose and treat their children's ailments, with regrettable results. The book is, however, one of the best of its kind and deserves a wide circulation.

J. A.

BOOK FOR MOTHERS ON THE MANAGEMENT OF CHILDREN IN HEALTH AND IN DISEASE. By MRS. A. M. USHER. Pp. 106. J. and A. Churchill, 7, Great Marlborough St., London, 1913. Price 1s.

THIS is a cheap shilling's-worth and contains everything clearly and succinctly written that a mother should know regarding the care of her children from the earliest years and onwards. Most of it is, of course, to be found in other works of its kind, but we can heartily recommend this little unpretentious work to all who have or are about to have the care of children.

F. R. B. A.

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Original Articles.

UNUSUAL MANIFESTATIONS OF POLIOMYELITIS.*

By F. E. BATTEN, M.D., F.R.C.P.,

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I PROPOSE to bring before you a series of cases illustrating some of the unusual manifestations of poliomyelitis. The word "poliomyelitis" is used in its widest sense to indicate an acute specific fever which may affect any part of the nervous system. Recognising this fact it is not difficult to conceive that the clinical features which result from this disease may vary enormously. You are so well acquainted with the ordinary types of poliomyelitis as it affects the spinal cord, giving rise to a flaccid palsy of legs, arms and trunk, that I do not propose to deal with these, except in so far as they are seen in association with other symptoms, and aid the diagnosis, which otherwise might be obscure.

I. ATHETOSIS OF LEFT ARM AND LEFT SIDE OF FACE, FLACCID PARALYSIS OF LEFT LEG, AND SOME FLACCID PARALYSIS OF RIGHT LEG.

A. A—, aged 7 years, was the seventh of eight children. She was a healthy baby till the age of ten months, when she had an

* Lecture delivered at the National Hospital, Queen Square, November the 25th, 1913.
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acute illness with convulsions. From this she recovered, but it left her with paralysis of the left side. She subsequently learnt to talk, was intelligent, and went to a school for physically deficient children. She never learnt to walk.

When first seen she was a pale child, with marked athetosis of the left arm and involuntary movements of the left side of the face.



FIG. 1.—Poliomyelitis of legs and athetosis of left hand and face. The left hand is blurred owing to its constant movement.

She was unable to stand, and if an attempt were made to place her on her legs she supported her weight on the right leg with the knee flexed, the left leg being too weak to support any weight. The left hand went into violent spontaneous movements of an athetoid character (Fig. 1) on attempting to walk or make other movements. The child had little or no power of movement over the left hand; there was, however, no rigidity, and the hand, though at times

strongly contracted, yet when moved passively was quite flaccid. The left leg showed the typical flaccid palsy of poliomyelitis with wasting of muscles, loss of deep reflexes, and loss of electrical reaction of all muscles below the knee, and to a lesser degree above the knee.

This case illustrates the association of an athetosis with a poliomyelitis. There is no reason to doubt that the paralysis of the legs is due to a spinal lesion and the athetosis of arm and face is due to a cerebral lesion. It may be questioned whether there is sufficient



FIG. 2.—Instantaneous photo of same child in celluloid splints.

evidence to prove that the condition is due to the virus of poliomyelitis, but so far as the legs are concerned they may be considered typical of the condition. The arm paralysis occurred at the same time, and there seems no reason for hypothesising another toxic condition for the production of the focal lesion in the brain. The contraction which was present in the leg has been corrected, the left leg supported by a celluloid splint to the hip, and the right leg by a celluloid splint to the knee. The girl walked fairly well with some support, but the athetosis of the left arm tended to upset her balance (Fig. 2).

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II. POLIOMYELITIS WITH RIGID EXTENSION OF THE LEGS AT THE HIPS.

H. G—, the fifth child of a family of five, was taken acutely ill with poliomyelitis in September, 1912, the limbs, trunk, face and eyes being affected at the onset. He was acutely ill for fourteen days, then gradually recovered the power in his right arm, but had severe pain and tenderness in trunk and lower limbs. When seen in March, 1913, both legs were rigid at the hips and everted, and attempt at movement caused acute pain. Below the knee the muscles were flaccid and the feet in a position of equinus. The muscles around the shoulder of the left arm were completely paralysed, and there was likewise considerable intercostal and abdominal paralysis. The child was quite rigid in the extended position;



FIG. 3.—Poliomyelitis with rigid extension of legs at hips.

and if lifted off the bed by the hands placed under the head and heels, he maintained this extended position (Fig. 3). This rigid extension of the hips appeared to be due to the unbalanced action of the gluteal muscles, the psoas and the iliacus muscles being completely paralysed. Any attempt at flexion of the hip gave rise to pain, but if once flexed, the hip-joint could be moved in any direction quite easily. X-ray examination made it certain that there was no hip disease. All the deep reflexes were abolished in the lower limbs.

The clinical features of this case suggested the possibility of some disease in the hip-joints, but there seems to be no doubt that the condition was due to an extensive and rather unusual grouping of paralysed muscles due to poliomyelitis. The pain in this case has persisted for over fourteen months. It is much less acute than eight months ago, but movements are still resented and obviously painful.

III. POLIOMYELITIS WITH FLACCID PALSY OF THE RIGHT ARM AND LEFT LEG, WITH RIGIDITY OF THE RIGHT LEG IN THE FLEXED POSITION.

A. T—, the second of two children, was quite healthy at birth, but at the age of five weeks had "brain fever" with paralysis of the right arm and left leg. The right leg subsequently became paralysed and in a flexed position at the hip. When seen at the age of four months the child was fairly nourished; had complete flaccid palsy of the right arm and left leg. He lay on his back with the right leg cocked up in the air, the right foot being rotated inwards



FIG. 4.—Poliomyelitis with rigid flexion of right hip.

in a position of varus. The right knee-jerk could be obtained, the left was absent.

On electrical examination no contraction could be obtained in the muscles of the right arm and the left leg, whilst in the right leg the muscles above the knee reacted to faradism, whilst those below failed to react. The condition of the right arm and the left leg was typical of poliomyelitis, and the cocked-up position in the right leg seemed to be due to the contraction of the psoas iliacus group of muscles, whilst the extensors of the thigh on the trunk, *i. e.* glutei, etc., were paralysed. The flexed condition of the thigh in this case is the reverse of the extended condition seen in Case II.

IV. POLIOMYELITIS OF THE RIGHT ARM AND LEFT LEG OCCURRING DURING INTRA-UTERINE LIFE.

A. S—, the second of three children, was born in September, 1911. The mother was not attended by a doctor. The mother states

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that she did not notice the weakness of the right arm until the child was two months old, but this child, unlike her other children, never made any attempt to move its arm. Wasting of the left leg was noticed some months later, but no attention was paid to this until the child was eighteen months old, when it was found that it could not walk. The child had no acute illness from the time of birth till two months old when the paralysis was first remarked. The birth was easy, and there is no evidence of injury during parturition. The child is intelligent and well nourished, has a complete flaccid palsy of the right arm, with considerable wasting, and a flaccid palsy of the left leg, also accompanied by wasting. The knee-jerk on the right side is active, on the left side absent. The child presents the typical features of a case of poliomyelitis. The question which arises is whether this condition occurred during intra-uterine life, at birth or subsequently. It seems impossible, considering the severity and wide extent of the lesion that the child could have had an acute attack of poliomyelitis, which should have escaped the mother's attention, between birth and the second month of life. The paralysis of the right arm and the left leg is not such as one would expect from a birth injury. The case is clinically very similar to that recorded by myself in 'Brain,' 1910 (xxxiii, p. 149), in which a post-mortem was eventually performed, showing changes in the spinal cord characteristic of old poliomyelitis.

V. POLIOMYELITIS AND ATAXIA; PROBABLY DUE TO INVOLVEMENT OF THE CEREBELLUM.

R. S—, aged 5½ years, and M. S—, aged 1½ years, are brother and sister, and they were both taken acutely ill within a week of one another on August the 16th, 1909. The elder child had left facial paralysis, and ataxia of the right arm and leg, whilst his sister had paralysis of the left side of the face, and flaccid palsy of the neck muscles. In the elder child the ataxia cleared up in about fourteen days after the onset of the acute illness. The paralysis of the face cleared up somewhat later.

In the case of his younger sister the weakness of the face persisted for many months, as did also the weakness of the muscles of the neck, some permanent paresis of the neck muscles remaining. In these two cases there is no doubt that the paralysis was due to acute poliomyelitis, and in the case of the elder child it seems probable that there was a focus of the disease in the cerebellum.

VI. POLIOMYELITIS AND TOXIC NEURITIS.

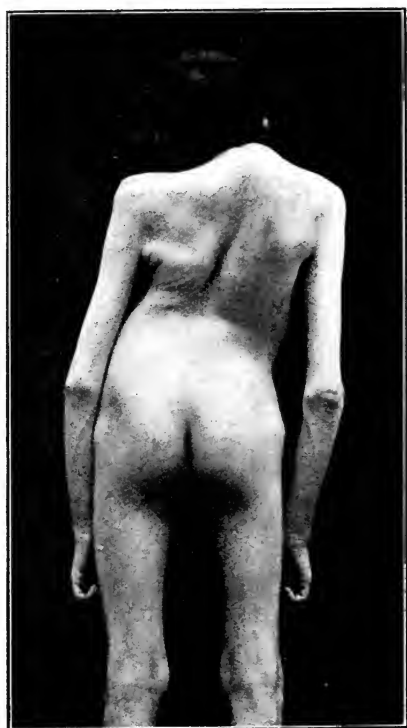
It is often questioned whether the virus of poliomyelitis can give rise to symptoms of a toxic polyneuritis. If the presence and persistence of pain are taken as evidence of the neuritis type of the disease, then it may be asserted that there is no justification for the title, since both these symptoms are well recognised accompaniments of affection of the spinal cord. If, however, there is evidence of weakness and wasting of the peripheral muscles which affects all the extremities more or less symmetrically, and at the same time there is definite alteration of sensation in the peripheral portion of the limbs, with tenderness of the muscles, then it will be justifiable to regard such a case as one of neuritis. If such a case occurred with a sudden onset, or in association with typical cases of poliomyelitis in other members of the same family or household, it would be justifiable to assume that the same poison was the causative factor. The recent work of Kling, Petterson and Wernstedt furnishes pathological proof that the virus of poliomyelitis may cause a degeneration of the lower motor neuron not dependent on an infiltration of the tissues. As evidence that poliomyelitis may produce toxic polyneuritis, the following cases may be quoted :

J. F—, aged 16 years, a milkboy. In July, 1910, he had some pain in both legs. On July the 30th he was taken acutely ill, vomited for three days, had pain in the abdomen and legs. On August the 3rd he could not stand, the legs gradually got weaker, and after a few weeks he was absolutely unable to move them, nor could he feel pin-pricks below the knees.

He was in bed for two and a half months, and after the seventh week his legs began to get better ; his arms were never severely affected. He came under my care in November, 1910 ; he had then weakness of the arms, a feeble grasp, and generalised wasting. The trunk muscles were unaffected. The legs were wasted below the knee, he had double foot-drop, absent knee-jerks, and absent ankle-jerks. Electrical changes of the character of R.D. were present in the muscles of the arms and legs. No loss of sensation could be detected when the patient was seen in November, 1910. There was no evidence of poisoning by lead or arsenic ; he recovered under treatment, and was discharged well in January, 1911. The case was obviously one of toxic neuritis. The only question which arises is whether his condition could be attributed to the virus of poliomyelitis.

The second case is that of E. H—, aged 5 years in 1898. He

was taken acutely ill at the end of August, 1898; he was feverish, lay prostrate, and was unable to turn in bed. He had acute pain in the back and limbs; he had no affection of the bladder or rectum. He was admitted to the Children's Hospital in October, 1898; he was then quite unable to walk or sit up in bed. He had considerable pain and tenderness of the trunk and limbs. He had no cranial nerve paralysis, but his voice was nasal in character and



FIGS. 5 and 6.—Poliomyelitis, neuritic type; late effect.

there was some weakness of the palate. There was a *general* weakness of the legs, arms and trunk; the knee-jerks were absent, there was no loss of sensation, and the muscles on electrical examination showed the changes characteristic of R.D. He gradually recovered and went out of the Hospital able to walk, but still very weak. Two years later he was still very weak and had considerable difficulty in rising from the ground and in going upstairs.

He was seen again in 1913. He is now twenty years old; he is very small in stature, 4ft. 2in.; he has a marked scoliosis to the right.

Both arms and legs are weak and thin, but the loss of power is general and not local, and does not look like a residual poliomyelitis. He still has difficulty in rising from the ground and in going upstairs.

The case, when seen in 1898, was regarded as one of poliomyelitis or peripheral neuritis following influenza, which the boy was said to have had ; but it is suggested that the virus of poliomyelitis may have been the cause of toxic neuritis, from which he has never made a complete recovery.

CONCLUSIONS.

The above cases form a series illustrating some of the more unusual manifestations of poliomyelitis, and serve to indicate some of the various symptoms which may result from an infection by that poison.

ADDISON'S DISEASE IN A BOY, WITH CALCIFICATION OF THE ADRENALS, WITH REMARKS.*

By H. D. ROLLESTON, M.D., F.R.C.P.,

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for Children, Chelsea ; and*

E. J. BOYD, M.R.C.S., L.R.C.P.,

Late House-Physician, Victoria Hospital for Children, Chelsea.

A BOY, aged $12\frac{3}{4}$ years, was bright, intelligent, and fair-skinned until about the end of October, 1913, when his skin was noticed to be brown ; this was at first attributed to dirt and an attempt was made to wash it off. When this attempt failed it was thought to be due to his habit of drinking vinegar. Synchronously with his change in colour he lost all his energy, was inclined to sleep all day, very easily got tired, had a cough at night and nocturnal enuresis. There has not been any gastro-intestinal disturbance or fainting attacks. Except for chickenpox some years ago the patient has not had any illnesses. An uncle and a brother are said to have had tuberculosis. The other children and the parents are fair.

On admission the boy had a somewhat lifeless, sleepy, sunken-eyed

* This case was shown on January the 9th, 1914, at the Clinical Section of the Royal Society of Medicine.

appearance and a general bronzing of the skin, especially around the nipples, the umbilicus and pudenda. There is a large pigmented scar in the left groin, a smaller one in the middle line between the pubes and the umbilicus, and the back and abdomen show a few scattered spots of pigmentation. On the right side of the abdomen there are scars of a former herpes zoster, but these are not pigmented. The skin is somewhat dry and scurfy, and it is perhaps due to desquamation that a scratch on the skin remains white for a long time. There is no buccal pigmentation. There are no signs of pulmonary or spinal tuberculosis, and von Pirquet's reaction was



Skiagram of the suprarenals in a boy with Addison's disease (Stanley Melville).

negative on two occasions. The systolic blood-pressure in the arms varies between 64 and 84 mm. Hg. There is no valvular disease of the heart. There is no dulness behind the manubrium sterni. The spleen and liver are not palpable.

Skiagraphy: Dr. Stanley Melville reports—"There are very definite calcareous particles in the region of the last rib and suprarenal body on the right side, less definite on the left side. The heart is small and vertical. There are discrete and dense opacities at the hila of the lungs, suggesting calcified nodules. No abnormal shadow was seen in the situation of the thymus. The movements of the diaphragm are feeble, but the expansion and translucency of the apices normal."

BLOOD-COUNTS (BY DR. S. WYARD).

December the 11th, 1913.

Reds	6,492,000
Hæmoglobin	80 per cent.
Colour-index	0·6
Differential count of leucocytes :	
Polymorphonuclears	33·5
Eosinophiles	7·0
Lymphocytes (large)	14·5
„ (small)	40·0
Hyaline	3·5
Transitionals	1·5
	<hr/>
	100·0

The red cells are normal in size, shape, and staining.

December the 22nd, 1913.

Reds	5,300,000
Hæmoglobin	75 per cent.
Colour index	0·73
Leucocytes	23,000
Differential count :	
Polymorphonuclears	48·5
Eosinophiles	6·5
Lymphocytes (large)	11·5
„ (small)	28·5
Hyaline	2·0
Transitionals	3·0
	<hr/>
	100·0

December the 30th, 1913.

Reds	5,200,000
Hæmoglobin	68 per cent.
Leucocytes	21,000
Differential count :	
Polymorphonuclears	60·0
Basophiles	0·5
Eosinophiles	4·0
Lymphocytes (large)	15·5
„ (small)	16·5
Hyaline	1·0
Transitionals	2·5
	<hr/>
	100·0

January the 9th, 1914.

Reds	6,400,000
Hæmoglobin	73 per cent.
Leucocytes	30,000
Differential count :	
Polymorphonuclears	62·5
Eosinophiles	6
Lymphocytes (large)	15
" (small)	11
Hyaline	2·0
Transitionals	3·5
	<hr/> 100·0

The treatment consisted in rest in bed and adrenalin chloride solution (1 in 1000), ten minims in water three or four times daily by the mouth. Later sandwiches containing raw adrenal glands were given. After this the pigmentation appeared to increase.

REMARKS BY DR. H. D. ROLLESTON.

Addison's disease is rare in children. In 1897 Dezirot (4) collected 48 cases in children under sixteen years of age, and in 1910 Chemin (3) collected 56 cases under that age, but amongst these he includes the case of a girl, aged 3 years, which was published independently by Pitman (12), J. Ogle (11) and W. H. Dickinson (5), and was probably the earliest example of precocious sexual development associated with a cortical hypernephroma. Out of 55 of Chemin's cases 6 only occurred in the first decade, and J. Thomson (15) states that Addison's disease in children occurs almost exclusively over the age of twelve years. A most remarkable exception to this is the family with five cases of Addison's disease at the same time—in the mother, and four children aged 7, 4,* $3\frac{1}{2}$,* $2\frac{1}{2}$ years—recorded in 1900 from Edinburgh by Fleming and Miller (6). These patients when reported were all living, and the authors were obviously conscious of their exceptional nature, for they remarked that it may be questioned if these five individuals are all the subjects of true Addison's disease. It is noteworthy (*a*) that in "an account of

* These ages may remind the reader of the lines in James and Horatio Smith's 'Rejected Addresses' and their own footnote:

"My brother Jack was nine in May†
And I was eight on New Year's Day."

† Jack and Nancy, as was afterwards remarked to the authors, are here made to come into the world at periods not sufficiently remote. The writers were then bachelors."

the epidemic outbreak of arsenical poisoning in the north of England and in the Midland counties in 1900," E. S. Reynolds (13) mentions that some of the pigmented cases were diagnosed by his assistants as Addison's disease, though in describing the extent of the epidemic he does not mention Edinburgh or any town so far north; and (b) that Fleming and Miller's cases were published before the existence of this epidemic was recognised. Although there is no justification for considering Fleming and Miller's cases to be examples of arsenical pigmentation, the exceptional nature of the cases and the coincidence of the epidemic in another part of the country are certainly suggestive.

In Chemin's 55 cases, 32 were males and 23 girls. He concludes that the features of the disease in children, which differ from those seen in adults, are darkening of the hair, diarrhoea (present in the four children reported by Fleming and Miller), incontinence of urine, and the more rapid course of the malady. Darkening of the hair, however, may occur in adults. It is now generally recognised that Addison's disease may be complicated by the *status lymphaticus*; out of 15 cases of Addison's disease Hedinger (8) found that seven showed *status thymico-lymphaticus*, and five pronounced lymphatic hyperplasia. In Langmead's (10) case of Addison's disease in a boy, aged 10 years, the spleen, 5 oz., came down almost to the umbilicus. A high lymphocyte count, such as was seen in the two first blood examinations of our case, is regarded as evidence of lymphatism and therefore as a bad prognostic. The eosinophile count in our case was high—7, 6·5, 4, and 6 per cent.; Gulland and Goodall (7) refer to a case with 10 per cent. For the increased number of red blood-corpuscles occasionally seen in Addison's disease various explanations have been offered. It has generally been assumed that it is due to concentration caused by vomiting and diarrhoea, neither of which occurred in our case. A specific action of the tuberculous toxin has been invoked, and in this connection it may be mentioned that erythræmia has been recorded in about 6 out of 50 collected cases of primary massive tuberculosis of the spleen (Winternitz (18)). G. R. Ward (16) regards erythræmia in Addison's disease as a compensatory process, and argues that adrenal insufficiency gives rise to circulatory stasis, which in its turn causes concentration of the blood and actual increased formation of red blood-cells. The small size of the heart, shown by the *x* rays in our case, was insisted on by C. R. Box (2), and in Langmead's case of Addison's disease in a boy, aged 10 years, the heart weighed 3 oz. and resembled that of a child of two or three years old. The small size of the heart is no

doubt closely correlated with the absence of adrenin and with the low arterial blood-pressure.

In an account of the pseudo-meningitic form of acute adrenal insufficiency, Sergeant (14) described a cutaneous sign which he considered characteristic of low blood-pressure and adrenal insufficiency. On irritating the skin by a scratch a persistent "white line," due to reflex capillary spasm, results, which is the exact reverse of the well-known *tache cérébrale* in tuberculous meningitis. According to Le Clerc (9) this sign had long before been noticed in diseases other than Addison's disease by Gubler; and L. Bernard (1) brought forward evidence to show that it is valueless as an indication of low blood-pressure and adrenal insufficiency. Our patient certainly presented it, but as already mentioned, it may well have been due to partial detachment of some of the dry epidermis.

There is a point of speculative interest in connection with the cutaneous scars: one in the left groin was much pigmented, a common event in Addison's disease; but on the right side of the abdomen and thorax there were scars, exactly like those of a former herpes zoster, which were pale and contrasted with the adjacent pigmented skin. In answer to the question why the latter were not pigmented, it may be suggested that the absence of pigment is connected with impaired innervation of the herpetic scars. If this is so, it is an argument in favour of the view that the bronzing of the skin in Addison's disease is due to nervous irritation.

The demonstration of calcification in the adrenals and in the bronchial lymphatic glands by skiagraphy is interesting, especially in so young a patient. It points to obsolete tuberculosis and thus agrees with the negative von Pirquet's reaction. Presumably cicatricial contraction in the calcifying adrenals, rather than active tuberculosis, is responsible for the recent appearance of symptoms of Addison's disease. As an exceptional example of calcification, though not subsequent to tuberculosis, attention may be drawn to Hale White and Bryant's (17) case of wide-spread arterial calcification and endarteritis associated with hydronephrosis in an infant of six months. In connection with Addison's disease and calcification reference may be made to the case of a man, aged 25 years, with cutaneous pigmentation, asthenia, which suggested Addison's disease during life, and wide-spread arterial calcification. At the necropsy the suprarenals were healthy, and the main visceral lesions were fibrosis of the left kidney and complete destruction of the right kidney by old disease. 'The myocardium showed calcification (B. Bramwell, 'Clinical Studies,' 1909, vii, p. 242).

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TONGUE-CHEWING.

By BERNARD MYERS, M.D., M.R.C.P.,

Medical Registrar to the Royal Waterloo Hospital for Children and Women.

THE following cases of tongue-chewing will, I think, be of interest, as, in the first place, they exhibit a peculiar neurosis which may occur in children or adults, and, in the second place, these are, as far as one can gather, the first cases of the kind to be reported.

The condition consists of the chewing of one side of the tongue by the teeth after practically the identical manner in which some of the American children chew their chewing-gum. In the process the premolars and molars of the particular side of the jaw move inwards over the tongue for about a quarter of an inch, and then glide over and off it until the upper and lower molars are in apposition again; then the movement is repeated. The rate is about ninety per minute. The chewing movement may be kept up for a few seconds, minutes, or half an hour. It may be performed once or twice daily, or intermittently at various intervals. The repetition of the habit makes part of that side of the tongue distinctly red and occasionally inflamed and indented. I have never seen a child chew both sides of the tongue, and the side chewed is apparently never varied. The earliest period at which tongue-chewing begins

is probably during the second year of life, when the child has obtained some back teeth. It may possibly remain with the individual throughout life. A bad tooth or a gumboil on the chewing side will accentuate the process very greatly, and should the sufferer have stopped it for a few weeks any irritation upon the affected side of the mouth will at once start the chewing again. A very important point is that no food or other material is to be found in the mouth during the process, so that it has nothing to do with merycism. Again, an onlooker can detect immediately which side of the tongue is being chewed. It does not seem to have anything to do with sex in that I have seen it in two cases of males and two of females.

The first case is that of a man, aged 44 years, who has chewed his tongue from early childhood, and, notwithstanding great efforts on his part to stop it, I have on many occasions lately seen his jaws moving when he was sitting quietly and quite oblivious of the fact himself. The movement always becomes worse when he is excited or worried. He is a professional man, well built and healthy in every way. During his athletic career he gained many cups and medals for prowess at running, swimming and rowing. He is apt to get excited over comparatively trivial things, and once had a severe attack of neurasthenia after the worries of an election. There is no history of epilepsy or fits, or any mental peculiarity in the family, which is a robust and healthy one. Neither his mother nor father suffered from this complaint, nor have his two elder brothers and sister, but the remaining member of the family has also chewed his tongue since childhood. He is likewise a professional man, of robust constitution, and quite healthy. At the present time he is a tongue-chewer only when excited, or if worried by some irritation on the particular side of the mouth. As a child he suffered for years on and off from various habit-spasms and from rheumatism.

The third case is that of a strapping girl, aged 14 years, the picture of health and not particularly highly strung. She is a daughter of the elder brother above-mentioned. She has chewed her tongue from early childhood and does it still. Her brother, aged 10 years, is free from the habit.

The fourth case is that of a girl, aged 7 years, and daughter of the younger brother above-mentioned. She began the habit during her second year. She is a strong and healthy child, the only children's ailment from which she has suffered being laryngitis stridulosa, her first attack of which began at the age of nine months, and she still occasionally gets mild attacks of it. Two elder sisters are highly strung, and have suffered from laryngismus stridulus as

infants and from habit-spasms since then, but neither has chewed her tongue.

After having watched these cases for many years I cannot regard them otherwise than as a peculiar form of habit-spasm, although, I admit, the persistence of tongue-chewing to middle age is not easy to explain. Certainly if they be not cases of habit-spasm, I am not personally aware of the category into which they should be placed. Any irritation, such as a painful tooth, brings on the habit at once, and it persists for some time after the removal of the tooth. There are many cases of habit-spasm in this family. The special peculiarities are the early age at which it is first noted, its persistence into adult life, and the never altering of the side of the tongue which happens to be chewed.

The effect of bromide upon the condition is to lessen and gradually stop the habit for a time, but it invariably comes back again. It in no way interferes with the health or vocation of the individual.

SUMMARY.

Tongue-chewing is first noticed about the second year of life and persists until middle age, or, perhaps, throughout life.

It tends to be less noticeable with advancing years.

Either sex may suffer from it.

It occurs, apparently, in healthy families, in which certain members suffer from habit-spasms.

Several members of one family may suffer from it.

The habit is inherited, as far as one can see, and not copied.

The same side of the tongue is always chewed in the same individual.

The mental condition is quite normal and the general health is not interfered with in any way.

Bromides stop the tongue-chewing, but in time, after leaving off the drug, the habit recommences.

NERVOUS DISEASES OF ELEMENTARY SCHOOL-CHILDREN —BOYS AND GIRLS.

By JOHN PRIESTLEY, M.R.C.S.,

Senior School Medical Inspector, Staffordshire Education Committee.

A STUDY of the incidence of disease in the two sexes may ultimately prove to be illuminating both as to the problem of sex and as to the ætiology of disease. The medical inspection of scholars in

our elementary schools, in which all children are passed through a uniform medical examination, has brought to light several interesting points of constant difference between boys and girls. On this occasion I wish to confine attention to points of difference in the incidence of nervous diseases.

The following table is based on the records of 62,236 children medically inspected during 1909-10-11. The children were of the age-groups 5-6, 8-9 and 12-14, one fifth, approximately, being of age 12-14, and two fifths each of ages 5-6 and 8-9. There were 31,352 boys and 30,884 girls. There was no overlapping in the groups, *i. e.* no child figures twice over in virtue of having passed from one age-period into another.

As we do not investigate the mental condition of children of 5-6, the figures in the table referring to dulness and mental deficiency are derived from the examination of the children of 8-9 and 12-14, who together amounted to—boys, 18,515; girls, 18,447; total, 36,962.

Nervous Disorders of Boys and Girls.

Disorder.	Per 10,000 boys examined.	Per 10,000 girls examined.	Total number of cases of the disorder discovered.			
MENTAL :						
Dull or backward	901	623	2818 out of 36,962 children.			
Mental defect	49	31	148	"	"	"
Stammering	67	20	271	"	62,236	"
Defective articulation	183	116	931	"	"	"
NERVOUS SYSTEM :						
Spasmodic affections	17	11	87	"	"	"
Paralysis	29	18	145	"	"	"
Epilepsy	13	6	61	"	"	"
Chorea	2	5	24	"	"	"
Headache	181	293	1471	"	"	"
Functional disorders	124	138	817	"	"	"
Asthma	4	1	17	"	"	"

Mental dulness is judged of by the inspector in consultation with the head teachers. Defective articulation of speech includes all kinds of indistinctness, slurring, lisping and idioglossia. Spastic affections include all conditions of a spasmodic nature, habit spasm, spasmodic wry neck, etc. The cases of paralysis are, chiefly, of course, the effects of infantile paralysis. Headache would not be put down against young children except on the authority of their parents or the head teacher. Functional disorders is a nondescript

class including "nervousness," tremors without apparent organic cause, incontinence of urine, etc.

The table is certainly interesting. In only two complaints, viz. chorea and headache, are more cases recorded against girls than against boys; and in chorea the predominance may depend on the predominance of rheumatism among girls. Emmett Holt (1) states that girls as a class show twice as many cases of rheumatism as compared with boys, and this has been our experience in the (relatively few) cases of rheumatism that have come to our notice in Staffordshire.

In functional disorders boys and girls are approximately equal; but in every other nerve complaint—including all the serious ones, mental dulness and defect, stammering, paralysis, epilepsy—there is a marked preponderance among boys.

An explanation of this unequal incidence of nervous disorders in boys and girls, as regards mental dulness at least, has been sought (2) in the fact that the brain in girls ceases to grow in weight at about the age of seven, while in the case of boys it continues to grow until puberty (3). A still growing brain might be supposed to be more liable to derangement than one which has ceased growing. It is not improbable that this physiological difference of growth plays a part in the sex differences as regards nervous affections; but is it the fundamental cause of difference? To put this to the proof we ought to contrast boys and girls at age 5-6 while the brain is still growing in both. I am not in a position to do this fully, since, as already mentioned, children are not classified for dulness or mental deficiency until they are about eight years old. But it is possible to contrast them in regard to all the other important nervous complaints. Headaches for obvious reasons should be left out of the calculation; it is difficult to judge of headaches at age 5-6; but taking all other cases of nervous disorder together—stammering and defective articulation of speech, spasmodic and paralytic affections of childhood, epilepsy, chorea, functional disorders, and asthma—we find that 12,837 boys of 5-6 showed 601 cases of disorder, or 468 per 10,000, while 12,437 girls of 5-6 showed only 431 cases of the same disorders, or 346 per 10,000. Clearly the relative immunity of girls is not entirely, if at all, dependent on the earlier cessation of growth of the brain.

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The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, December the 12th, 1913.

The President, DR. LEONARD GUTHRIE, in the Chair.

Discussion on Enlargement of the Spleen in Children.—Dr. HUTCHISON suggested the following grouping of enlargements of the spleen met with in children in this country :

(1) Tumours. Neoplasms, endothelioma, cysts, etc. (2) Infective : Typhoid, ulcerative endocarditis, malaria, tuberculosis, lymphadenoma, chronic arthritis. (3) Chronic venous congestion. (4) Metabolic disorders : Rickets, lardaceous disease. (5) Blood diseases : Leukæmias, splenic anæmia of infancy, chloroma, congenital anæmia with splenomegaly and jaundice. (6) Splenic anæmia of the adult type. (7) Syphilitic. (8) Splenomegaly with acholuric jaundice. (9) Splenomegaly with cirrhosis of liver : (a) portal cirrhosis, alcoholic and other forms ; (b) biliary cirrhosis ; (c) syphilitic cirrhosis ; (d) Banti's disease ; (e) congenital obliteration of bile-ducts.

Dr. HUTCHISON pointed out that the classification was mainly a clinical one. He then made a few remarks explanatory of each group. With regard to group 5, he pointed out that chronic myeloid leukæmia, which causes so great a degree of enlargement of the spleen in adults, is a rare disease in childhood, but acute myeloid and lymphatic leukæmia are not very uncommon, and are attended by a considerable degree of splenomegaly. Closely allied to these is the enlargement met with in chloroma.

By far the commonest blood disorder in early childhood, characterised by marked enlargement of the spleen, is the so-called pseudo-leukæmia of von Jaksch (splenic anæmia of infancy). Mention was also made of those rare cases of congenital anæmia with jaundice and splenomegaly described by Buchan and Comrie. The pathological problems which arise in connection with enlargement of the spleen in these cases in children do not differ from the kindred problems which arise in the case of adults. Group 6 : Cases are sometimes met with in later childhood which are indistinguishable from the splenic anæmia of adults. They are characterised by a great enlargement of the spleen with a slight degree of anæmia persisting for a variable number of years, after which cirrhosis of the liver supervenes with ascites and gastrointestinal hæmorrhages. Group 9 : Enlargement of the spleen with cirrhosis is not infrequent. Several varieties may be distinguished. (a) The cirrhosis may be of the multilobular type ; some cases are alcoholic, but probably other poisons produce a similar result. (b) The cirrhosis may be of

the monolobular variety (Hanot type), in some the enlargement of the spleen precedes, and is relatively more pronounced than that of the liver. (c) The cirrhosis may be syphilitic. (d) Enlargement of the spleen may exist for years and be followed by a multilobular cirrhosis (Banti's disease). (e) Cirrhosis may depend upon congenital malformation of the bile ducts.

As regards pathology (a) What is the cause of the enlargement of the spleen? (b) What is its relation to the pathology of the disease as a whole? and especially is the spleen playing an active or passive part? It is reasonably certain that the cause of the enlargement is not the same in all the groups, but it is particularly necessary to inquire what part is played by syphilis in its production. Dr. Hutchison suggested that in groups (6) and (8) syphilis plays no part, nor in cases of cirrhosis, except where the cirrhosis is of the well-known syphilitic variety. As to the ultimate cause of the enlargement in acholuric jaundice, in splenic anæmia of the adult type, in portal and biliary cirrhosis and congenital obliteration of the bile-ducts he had no suggestions to offer. The results of splenectomy are now enabling one to say whether the part played by the spleen is active or passive. In groups (6) and (8) the spleen is in some way the cause of the other features in the clinical picture.

As regards therapeutics he suggested that splenectomy is indicated in groups (1), (6), and (8), though the comparatively benign course of the latter renders it questionable whether operation is justified unless in exceptional circumstances. It will generally be admitted that it is entirely inadmissible in group (5).

Sir JOHN BLAND-SUTTON first discussed the functions of the spleen. He pointed out the rapid increase in size after birth, and the facility with which it becomes engorged in fevers and other infantile disorders, especially rickets, suggests that it has important functions at the commencement of life. The enlarged spleen associated with numerical reduction of the red corpuscles in the disease of children known as splenic anæmia is due to functional over-activity of the spleen. The enlargement is due to the accumulation of the products of hæmolysis. When its destructive activity is excessive, harmful products of this over-action accumulate in the blood, producing, in addition to anæmia, acholuric jaundice. Splenic anæmia often ends fatally, and there can be little doubt that some wandering spleens in young women are chronic examples of this disease, the mobility being caused by its abnormal size. He had removed the spleen of a young woman, aged 22 years, for acholuric jaundice with a most satisfactory result. In children the spleen can certainly be removed without interfering with their growth and development. Removal of the spleen in children suffering from splenic anæmia is a life-saving measure. In 1895 he excised a spleen from a girl, aged 5 years, for splenic anæmia. Sutherland and Burghard's patients were aged 6 and 12 years respectively. Hutchison had removed the spleen from a boy, aged 7 years. Makins had removed the spleen from a girl, aged 9 years. He (himself) had removed an enormous spleen from a girl, aged 17 years, suffering from splenic anæmia and jaundice. In all these cases the result of the operation was a complete success.

He recommended opening the abdomen in the left linea semilunaris. The suspensory ligament (phreno-colic) is then snipped with scissors, and the spleen then slips out quite easily. The vessels are secured with hæmostatic forceps and divided with the gastro-splenic omentum close to the spleen. After the organ has been excised the vessels are tied with silk. The greatest care must be taken in this step.

He then emphasised the importance of a study of the microscopic features of the blood when there is enlargement of the spleen. To-day any abdominal swelling resembling an enlarged spleen suggests a blood-count, and he is an unwise surgeon who removes a spleen before making a microscopic examination of the blood.

The removal of a leukæmic spleen always ends in disaster. In dealing with splenomegaly the physician is the reliable guide and the surgeon his willing instrument.

Dr. G. A. SUTHERLAND pointed out that at one time "primary" diseases of the spleen were not recognised. At the present time, instead of there being no recognised primary diseases of the spleen it would appear that the number of them is increasing, as judged by the results of splenectomy for the relief or cure of various clinical phenomena. Here, as in other cases, surgical procedures have gone ahead of pathological knowledge, for it is not yet known what the exact nature of the splenic disease has been. Dr. Sutherland then gave an account of two cases of splenic anæmia which had been under his care in each of which Mr. Burghard had performed splenectomy (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, p. 73). He pointed out that in splenic anæmia the splenic vessels are enlarged, and that this has usually been ascribed to the call of the spleen for more blood. On the other hand, it is possible that there may be primarily a pathological condition of the splenic vessels, a vaso-motor disorder, leading to hyperæmia of the spleen, and that its natural functions are thus disturbed.

Dr. POYNTON limited his remarks to cases of family acholuric jaundice. He had four families under observation, including twelve individuals, some of which had been under observation for some years. He believed that he was among the first to point out in this country that the condition of yellowness might alternate with that of anæmia, and that an enlarged spleen with an anæmia so little tinged with a yellow colour as to be easily overlooked might occur in some members of these families. He recognised very clearly those cases which were always more or less yellow, somewhat anæmic, with enlarged spleens, and slightly enlarged livers, and were liable to attacks in which they become much more yellow. On the other hand, he had seen a case in the same family as one of these, admitted to hospital intensely jaundiced, and a year later admitted again as a severe "chlorosis." He had not yet had a case operated upon, although in one case he had recently advised it. The diagnosis was full of difficulties and they were interesting ones. Gall-stone colic, gastric ulcer, intussusception and renal colic had been among those made in his cases. Syphilis of the liver, splenic anæmia, chlorosis, and Addison's disease were other diagnoses that had been made in his comparatively small collection.

Dr. THURSFIELD said that the type of disease known as splenic anæmia was really a congeries of cases due to different causes. From that group there had been separated off the group of acholuric jaundice. But even that was not a homogeneous group. Dr. Poynton had mentioned cases of the family type; there were also acquired cases which behaved in the same way as those of the family group. The causation remained obscure though it was certainly not syphilis. With regard to the pathology of the various cirrheses he did not think that any advance had been made. At present there was no method by which one could examine the blood of the living patient and demonstrate the hæmolysins causing the anæmia or the pigmentation. Still he did not despair of some such method being found. With regard to the fragility of corpuscles there was no abnormal fragility

in any disease, even in purpura hæmorrhagica and scurvy, except in acholuric jaundice, where in twelve cases with one exception the fragility was abnormal. He feared that he might be regarded as somewhat despairing with regard to diagnosis. He felt that in these obscure cases, when the patient was not making satisfactory progress, that a surgeon should be asked to remove the spleen, especially because he believed that in the vast majority of cases of splenectomy the whole of the splenic tissue was not removed.

Mr. PHILIP TURNER mentioned a case of a boy, aged 5 years, whose spleen he had removed. He had been admitted six times to various hospitals and once had been treated as an in-patient for nine months. He was very wasted; the skin had a yellow waxy appearance; the spleen was much enlarged, filling the left iliac fossa. Anæmia was intense, red corpuscles being one and a half million and hæmoglobin 25 per cent. Dr. French, under whose care the child was, had diagnosed von Jaksch's anæmia. In spite of all treatment the child got steadily worse, and removal of the spleen was decided upon. The operation, which was carried out on the lines described by Sir John Bland-Sutton, was attended by very little shock, and but little blood was lost.

The result was remarkable. Within three months he was practically well and attending school, the anæmia had disappeared, he had strong limbs, a chubby face, and an excellent colour.

Dr. T. S. LUKIS discussed the question of the fragility of the corpuscles. Mention had been made of the vital staining granules which he had been studying for some time. His researches were not complete, and his conclusions had not been formed. Still, it seemed clear that, whatever these granules were, they bore a definite relation to blood destruction, and particularly to blood regeneration. One found them in cases which had surgical hæmorrhages; they appeared in the blood for a time during regeneration, and disappeared when the blood returned to normal.

In seven cases of acholuric jaundice which he had examined he found a very high percentage of these vital staining cells. One case showed 60 per cent. of total red cells abnormal in this way. A few days after removal of the spleen the vital staining granules returned to normal. He had also examined these cells in cases of von Jaksch's anæmia, pernicious anæmia, and leukæmia. Generally speaking in these cases where there was a high percentage of vital staining cells the prognosis was better.

Dr. PARKES WEBER suggested that the word "abnormality" might be substituted for enlargement of the spleen. He thought that with the help of further research the following classification might be possible:

- (1) Enlargements of the spleen in which the enlargement and structural or functional change was serving some useful purpose.
 - (2) Enlargements due to the presence of tumours.
 - (3) Enlargements or alterations due to the local presence of microbes.
 - (4) Enlargements or alterations connected with disorder or excess in the functional activity of the splenic tissue.
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Philadelphia Pediatric Society.

December the 9th, 1913, THEODORE LE BOUTILLIER, M.D., President.

Primary Splenomegaly.—Dr. S. McC. HAMILL presented this boy, aged $4\frac{1}{2}$ years. His father was said to have had “spleen trouble.” The child’s face was so swollen ten days after birth as to close his eyes. There were no other symptoms, and the physician states that the condition was not infectious. He had pneumonia at six months. A few weeks after birth anæmia was noted, which has persisted. At 14 months he had an exacerbation, hæmoglobin dropping to 24 per cent., and he was desperately ill. He has had a number of acute attacks since, accompanied by an elevation of temperature, sometimes to 104° F. He vomits with attacks, and has continued vomiting for days, and may be nauseated between attacks. The vomiting may have been cyclic, the anæmia being the result of the vomiting attacks. His last vomiting attack was in October, 1912. Last April, after three hours’ sleep, he awakened with loss of power in his left arm and complete paralysis of the left leg. He was not unconscious. He had fever, was restless and wakeful. Shortly afterward, following a negative Wassermann, he was given salvarsan intravenously, with alarming symptoms following. Subsequently he had four doses of salvarsan or neo-salvarsan by rectum. There was decided reaction after the two last, given July the 19th and August the 21st. Marked improvement of the paralysis, blood-picture and general condition followed. Physical examination shows a very large, firm, smooth spleen, extending down to the iliac crest and to the median line to the right; very slight enlargement of the liver, and almost complete absence of enlargement of the superficial lymphatic glands. Kidney secretion is much diminished. Bile and urobilin were not present in the urine. He is cheerful, and mentally active, but suffers physical fatigue from slight effort. His nights are restless. Blood-counts showed 1,360,000 erythrocytes, 49 per cent. hæmoglobin, and 7100 leucocytes. Differential count gave lymphocytes, 66 per cent.; large lymphocytes, 4 per cent.; transitionals, 1 per cent.; polymorphonuclears, 26 per cent.; eosinophiles, 1 per cent.; basophiles, 0; myelocytes, 0; two normoblasts in 100 leucocytes, numerous macrocytes and microcytes, few poikilocytes. The principal features of this extreme anæmia were the low leucocyte count and the excessive mononuclears. There is no jaundice now, but the mother states that the child’s skin has been very yellow at times. The persistent low leucocyte count, absence of jaundice and marked enlargement of the spleen lead to the diagnosis of primary splenomegaly. The early development of the anæmia suggests that it may be congenital, ante-dating the splenic enlargement. If the anæmia was primary, this fact, together with the increase in the number of mononuclear cells, makes one consider the possibility of pseudo-leukæmia infantum, but the leukopenia in the presence of the extremely grave anæmia makes this diagnosis untenable. Dr. Hamill was inclined to consider this case one of primary splenomegaly.

Amyloid Disease of the Liver.—Dr. HAMILL also showed a Russian boy, aged 9 years. He was supposed to have had scarlet fever at the age of four. He was brought for a deformity of his arm. This was found to be

due to a much contracted left chest compressing the lung, which was pushed into the upper part of the chest, giving all the signs of consolidation. The feature of interest was the enormous enlargement of the liver, which occupied more than three fourths of the abdominal cavity. Its left lobe extended over to the left lateral surface of the chest, and its notch was felt to the left of and below the umbilicus, while the right lobe extended downward almost to Poupart's ligament. The liver was firm, surface smooth, and edge sharp. Spleen was palpable, firm to touch, pushed below the margin of the ribs after full inspiration. There was no tenderness on pressure, and no other masses were found. There was moderate enlargement of all superficial lymphatic glands, with marked clubbing of fingers and toes. The child was undersized, very anæmic and emaciated. He has had a persistently intermittent temperature. When first observed, blood examinations showed moderate increase in leucocytes, with excess of polymorphonuclears. Recently he has more marked leucocytosis of the polymorphonuclear type and severe secondary anæmia. He never had any pain, jaundice, or ascites. He has had no diarrhoea. Albumin, in varying amounts, has been frequently found, but no casts. Cutaneous tuberculin test was mildly positive; Wassermann negative. The diagnosis of amyloid disease was based on the blood-picture, indicating an infection, the confirmation of this infection by the chest deformity, which probably indicated pre-existing pyæmia, the absence of jaundice and ascites, and the irregular type of fever.

Dr. E. B. KRUMBHAR discussed the first case, which he considered to be a true case of primary splenomegaly, probably of the Minkowski-Chauffard type. The chronic enlargement of the spleen, probably from birth, the anæmia, presenting marked changes from month to month, and the suggestive history of a similar condition in the father and grandfather, all point strongly to this hereditary condition. Following Chauffard's aphorism that these cases are more icteric than sick, his evident sick state and the absence of jaundice are atypical, but there is some evidence that during previous attacks jaundice has several times been present. Examination of urine at this time might also show excess of urobilin. An examination of the blood to determine the resistance of the red blood-cells to hypotonic salt solutions of different strengths would be of value in differentiating this type from other forms of splenic anæmia. If the fragility of the red cells was found increased, it would be strong evidence in favour of the Minkowski type. If this diagnosis is correct, then the question of splenectomy at once arises. Just as in the early stages of Banti's disease and in the acquired form of this disease (Hayem-Widal), and, in fact, wherever undue hæmolysis is proved, a large percentage of cures has resulted from splenectomy.

Caries of Lumbar Spine; Operation.—Dr. J. TORRANCE RUGH showed a boy, aged 14 years, who first developed caries of the lumbar spine at three years. He was treated almost from the beginning. Very early large psoas abscesses developed upon each side, disappearing under thorough fixation of the entire body in plaster. But they reappeared when a brace was applied and finally had to be opened. These openings healed, but later two sinuses formed and these are still discharging. He went without brace or support for four or five years, but one year ago began to show signs of activity of the carious process. Operation was performed January the 28th, 1913. It was purposed to do Hibbs' operation to secure ankylosis of the posterior segment of the spine, but pus was found about in four or five spines when uncovered in an attempt to strip the periosteum from the spinous processes.

Not wishing to risk the entire process each one was split in half, and one half was cut off at the base and turned down in contact with the process below it. The pus was wiped away and the periosteum sewed over to maintain position. The wound was closed without drainage and a plaster jacket applied. Recovery was uneventful and improvement has been steady; he is now anxious to go without his cast. The old sinuses are still discharging very slightly, but his health is improved and all signs point to the success of the operation. This method of operation was first used by Albee before he began bone-transplantation.

Separation of the Tibial Tubercles.—Dr. RUGH showed another boy, aged 15 years, first observed November the 3rd, 1913. He complained of tenderness on the anterior surface of each knee. This had been present for five or six months and gave him much annoyance. He was sturdy and active, growing rapidly. Examination showed marked enlargement just below the patellæ and tenderness over these areas. He complained that the knees hurt after walking or exercise. The diagnosis of separation of the tibial tubercles was confirmed by the X rays. He was ordered rest and ichthyol ointment was applied. In two weeks the tenderness had all subsided. The case will be watched, and if there is no attempt at union later, an operation will be performed to fix the tuberosities.

Dr. T. A. O'HARA said that the Albee operation had proved successful in over thirty cases in the Orthopædic Department of the University of Pennsylvania Hospital. So far as he knows, the Hibbs operation has never been attempted there.

Dr. RUGH added that this was the first type of operation done by Albee for Pott's disease, and was indicated in this instance in place of bone-grafting because of the suppuration along the spines.

Osteogenesis Imperfecta.—Dr. H. LOWENBURG showed an infant, aged 4 days. Labour was unusually easy, as the baby was undersized. Placenta was calcareous. It was noticed that crepitation occurred in nearly all the long bones. X rays showed fractures of all the long bones. That these fractures were intra-uterine was emphasised by the fact that the one upon the right humerus showed considerable callus which could not have formed after birth during four days. This might be an interesting medico-legal point. The case will be reported in detail later.

Dr. ROSE RUBIN said that delivery was quite easy. She first noticed crepitation of the arm after the posterior shoulder was delivered, even before the entire body was born. Aside from the calcareous degeneration of the placenta, there was nothing unusual about delivery. The mother gave a history of having had one child with club-foot. She married her first cousin, but has four other healthy, normal children. When she was about six months pregnant she fell down one step, but never noticed any ill-effects from the fall. There is no specific history.

Syphilis.—Dr. THEODORE LE BOUTILLIER showed three children. The first, a baby aged 2 months, showed large liver and spleen, and hæmorrhages from the mucous membranes. It had also had snuffles, skin eruptions, and great weakness. The baby has done well upon inunctions and calomel internally. Dr. le Boutillier considers it the worst case of hereditary syphilis he has seen, and conditions have cleared up remarkably well. The second was a boy, aged 7 years, under observation since one month old. At four

years he had an abscess over the right tibia, which was opened. Two years later marked ptosis of the right eyelid developed with strabismus. Wassermann was markedly positive and he was given salvarsan; ptosis improved in a month. Two subsequent injections of neo-salvarsan were given, and Wassermann is now negative. The father's chancre occurred eleven years before the child's eye became affected. He was under treatment three years and then married; four years later this boy, the only child, was born. Wassermann of father markedly positive; of mother negative. The third case was a boy, aged 5 years, first seen when six weeks old. He had snuffles and a skin eruption. His liver was enlarged. Treatment was kept up two years at that time. Now he is backward mentally, has a moderately spastic gait, markedly increased knee-jerks and ankle clonus. The case is clearly syphilitic myelitis.

Lateral Deviation of the Spine.—Dr. T. A. O'HARA showed a boy aged 15 years, with possible spondylitis.

Ringworm of the Scalp cured by X Rays.—Dr. FRANK CROZER KNOWLES exhibited two children. The first showed the depilation resulting from exposure to the X rays in the cure of ringworm of the scalp. The second presented typical scutulæ of favus.

Endoscopic Examination of Infantile Cervix and Vagina.—Dr. HENRY F. SINCLAIR demonstrated a method of examining the infant's cervix and vagina endoscopically. The method is of service as a prophylactic measure. During the current year he has examined eighty-three babies by this method. Both vulvar and vaginal smears were taken routinely and examined bacteriologically. Careful notes of vaginal and cervical conditions were kept. Nineteen per cent. were found to be infected with gonococcus upon admission to the Babies Hospital, or to present highly suspicious evidence of such infection. The early recognition of the infectious agent is of immense importance in instituting proper prophylactic measures. Over 21 per cent. of the cases which were positive or highly suspicious upon admission would have escaped detection without the use of the endoscope.

Société de Pédiatrie, Paris.

November the 11th, 1913. (Bulletin No. 9.)

Marked Hypertrophy due to Hypo-alimentation; Rapid Increase of Weight and Growth by means of Hypersaccharated Milk.—M. G. VARIOT reported a case, typical of many others of a similar character, under his care. He drew attention to the temperature chart, which was frequently 100-2° F., and on certain days reached 102-4° and 103-0° without anything in the general condition or in the stools being found to account for it.

Laparotomy in a Case of Intractable Vomiting.—M. DUFOUR reported the case of a premature infant, aged 3 months, on whom laparotomy was performed. Exploration of the abdomen afforded no explanation of the vomiting. Recovery followed spontaneously later.

M. VARIOT thought that laparotomy would have been avoided if hyper-saccharated or condensed sweetened milk had been tried.

Treatment of Pott's Disease by Lannelongue's Method.—MM. BROCA and A. TRÈVES reported cases in which, in order to obtain immobility in the dorsal position, they had replaced plaster apparatus, which tended to embarrass the respiration and cause muscular atrophy, by a corset made of bed-tick, which by means of braces not only ensured most perfect immobility and fixation, but also allowed extension to be made if necessary. Another advantage was that it facilitated exposure of the affected parts to solar rays. After three years a light celluloid apparatus was used which could be removed at night and finally discarded.

Patchy Sclerema.—MM. VARIOT and LORENZ-MONOD showed a boy, aged $1\frac{1}{2}$ months, with indurated circumscribed patches on the left cheek and thighs. Wassermann's reaction was positive. Under the influence of Ung. Napolitanum the patches rapidly disappeared and the Wassermann reaction was negative at the end of the treatment.

Acute Appendicitis during Varicella.—M. LESNÉ reported the case of a girl, aged 10 years, seized with characteristic abdominal symptoms on the day following an outbreak of the eruption of chickenpox. The appendix was found inflamed with small streptococcal abscesses in its walls. In another case, that of a boy, aged 5 years, a confluent eruption of chickenpox occurred the day after he was attacked with appendicitis. In this case, also, there was an abscess in the free portion of the appendix, giving cultures of streptococci and *B. coli*. M. Lesné regarded the appendicitis as a complication of varicella.

Loss of Mineral Matter by the Stools in an Athreptic Infant.—MM. MARFAN, DORLENCOURT and SAINT-GIRONS reported the case of an infant, aged 3 months, admitted to hospital for vomiting and diarrhoea in a state of extreme emaciation. Regulation of the feeds was followed by cessation of the vomiting and diarrhoea, but there was no improvement in the general condition, the infant dying of marked athrepsia. Autopsy gave negative results. During the week preceding death the stools were examined with the following results: For every 560 grm. of milk taken the quantity of matter passed was 42 grm. instead of 32 grm. in a normal infant, containing 3.53 grm. ashes as against 1.60 grm. In other words, during seven days the infant had taken with its milk 23.34 grm. of mineral matter and had eliminated with the fæces 24.75 grm. The authors believed that in the absence of digestive disturbance, the ætiology of true athrepsia was to be found in the insufficiency or absence of peptozymases and trophozymases.

Mongolian Blue Patches.—M. CONSTANTIN MACARONPOULOS, of Athens, reported nine cases. He proved conclusively that they were caused by pigmentary granules within the fusiform or stellate cells in the deep layers of the dermis. Several cases were associated with white hairs on the scalp, and the author considered that the congenital blue patch was not to be regarded as a sign peculiar to the Mongol race, but that it indicated rather some disturbance of cutaneous pigmentation. VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Variola in the newborn (*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 289).—**A. Epstein** records a fatal case in a newborn female infant whose mother developed smallpox the day after delivery. The child's temperature first began to rise on the third day of life and reached 39.5° C. the following day. A prodromal rash appeared in the right abdomino-femoral region on the fourth day. After the eruption had appeared the temperature fell to normal, rising again to 39.4° C. as suppuration occurred. The pustules were lower and flatter than in the adult. Many showed no umbilication. In the palms, perinæum, and especially the fingers the vesicles were unilocular and collapsed on pricking. Death took place on the eleventh day of life. The course of the disease was in no way affected by red light treatment.

J. D. ROLLESTON.

Recovery from tetanus neonatorum (*Deutsch. med. Woch.*, 1913, xxxix, p. 1789).—**G. Wolf**.—Typical symptoms of tetanus developed on the ninth day of life, two days after the umbilical cord, which had begun to suppurate, had fallen off. One hundred units of tetanus antitoxin were given on three successive days, half subcutaneously and half intra-muscularly. The child was given chloral *per rectum* and nasal fed with his mother's milk. After lasting for about three weeks the symptoms subsided. At the age of seven weeks the child was in perfect health.

J. D. ROLLESTON.

Tetany in the new-born (*Jahrb. f. Kinderheilk.*, 1913, lxxvii, p. 629).—**E. Kehr** describes six cases in the newborn of tetany. In one tetany and nephritis were combined (the mother suffered from eclampsia); in another tetany and scleroderma; in another tetany and severe jaundice; and in another tetany in the child occurred simultaneously with tetany in the mother.

F. R. B. ATKINSON.

Meningeal hæmorrhage in the newborn (*Thèses de Lyon*, 1912-13, No. 44).—**J. Thibault**.—The thesis contains brief notes of sixteen cases. The conclusions are as follows: (1) Meningeal hæmorrhage is one of the most frequent causes of death in the newborn. (2) It occurs at the moment of birth. (3) It differs from most of the meningeal hæmorrhages found in the adult by the absence of any previous meningeal inflammation. (4) It is frequently associated with subserous ecchymoses which are possibly due to a hæmorrhagic diathesis. (5) Death usually occurs rapidly, and can only be prevented by lumbar puncture (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, ix, p. 84). (6) The cause of the hæmorrhage is injury to the foetal head in passing through the pelvis. (7) Meningeal hæmorrhage is of medico-legal interest, as it is frequently found in autopsies on the newborn and in most cases of death without violence. It may be absent in cases of criminal asphyxia, and its presence by no means constitutes a presumption of infanticide.

J. D. ROLLESTON.

Bilateral phlebitis of the lower limbs in a newly born child (*Arch. de méd. des enf.*, 1913, xvi, p. 615).—**C. David** describes a fatal case in a child, aged 2½ months, following on suppuration of the umbilicus.

F. R. B. ATKINSON.

The gastric secretion of infants at birth (*'Amer. Journ. Dis. Child.,'* 1913, vi, p. 264).—**A. F. Hess** has made a series of observations on the gastric secretion of infants during the first few hours of life who have never been given any food. He finds that very soon after birth there is free hydrochloric acid in considerable amount in the unfed infant's stomach; and that this may be secreted almost uninterruptedly for some hours quite independent of the ingestion of food. He does not think that the mechanical stimulation of the stomach by the passage of an instrument was the cause of the presence of the acid, though probably the secretion of mucus can be so stimulated; nor does he regard the saliva as the natural gastric stimulus in the newborn. Rennin, pepsin and lipase were also obtained. The amount of hydrochloric acid was variable in different cases; exceptionally it was found almost lacking on repeated testing or very profuse (congenital hypochlorhydria).

REGINALD MILLER.

Duodenal ulcer in the newborn and infants (*'Le Nourisson,'* 1913, i, p. 331).—**P. Gallas.**—In the newborn and infants the subjective symptoms of duodenal ulcer, which are so prominent in the adult, are absent. Gallas describes four forms: (1) A normal form with melæna. In this form vomiting occurs, either immediately or one or two hours after food, diarrhœa is the rule, and emaciation is more or less marked and progressive. Hæmorrhage, which is the principal symptom, occurs either as melæna or much less frequently as hæmatemesis. (2) A gastric form simulating gastritis or pyloric stenosis. (3) A latent form in which the ulcer is a necropsy surprise. (4) A form in which the presence of an ulcer is suddenly revealed by a complication such as hæmorrhage or peritonitis. Four illustrative cases in infants, aged from 2 to 6 months are recorded (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, ix, p. 554, and 1913, x, p. 468).

J. D. ROLLESTON.

Hæmatemesis in the newborn and in young children (*'Thèses de Lyon,'* 1912-13, No. 1).—**A. Poursain.**—The thesis contains the histories of seventeen cases, sixteen of which occurred in the newborn and one in an infant of seven months; six died. Poursain's conclusions are as follows: (1) Hæmatemesis in the newborn and young children is much rarer than melæna. (2) It is often difficult to show the cause for the hæmatemesis; in most cases an ulcer must be incriminated, which is almost always situated in the stomach, rarely in the duodenum. (3) The prognosis should be guarded; death occurs in about one third of the cases. (4) The origin of the gastric ulcer varies; fairly frequently syphilis may be incriminated. (5) Treatment is symptomatic; rest of the stomach is most important. Gelatinised serum, horse-serum, and other hæmostatics may be of service.

J. D. ROLLESTON.

Melæna neonatorum (*'Jahrb. f. Kinderheilk.,'* 1913, LXXVIII, p. 249).—**E. Lövegren** reviews the literature and records ten cases. He estimates its frequency as 1 in 486 births. The delivery in all his cases was normal and the child was not asphyxiated at birth. None of the children had a family history of hæmophilia, nor were there cases of melæna in other members of the family. In only one case was there a history of syphilis in the parents. Six were females, 4 males. In 4 the first symptoms appeared on the first day, in 5 on the second, and in 1 on the third. Three were treated by gelatin by mouth or by rectum and 5 by hypodermic injection. Seven recovered, 3 died and came to autopsy. One showed about 150 small ulcers of the gastric

mucosa which were visible to the naked eye. Microscopically they were found to be more or less deep ulcerations of the glandular layer. In 2 no naked-eye changes were seen, but microscopically there were hæmorrhages in the glandular layer of the gastric mucosa and in the submucosa. The small blood-vessels were more or less dilated. The glandular layer showed more or less deep loss of substance. Hæmorrhages were also present in the suprarenals. Lövegren regards the hæmorrhages as primary, and the ulcerations as caused by the presence of the extravasated blood.

J. D. ROLLESTON.

Congenital dropsy (*'Arch. f. Kinderheilk.,'* 1913, LXII, p. 75).—**O. Fleischmann** and **S. Wolff**.—A premature male infant, born in a condition of blue asphyxia, showed a markedly distended abdomen in addition to generalised hæmorrhages and œdema. The ordinary methods of resuscitation proving unsuccessful, paracentesis abdominis was performed and 200 c.c. of reddish-yellow fluid were evacuated. The heart's action became more powerful and the infant was placed in an incubator. The following day more skin hæmorrhages appeared and death took place. Wassermann's reaction was negative in the child but positive in the mother, who subsequently died after giving birth to another dropsical infant, and showed, post mortem, commencing syphilitic aortitis.

J. D. ROLLESTON.

Congenital bilateral fistulæ of the lower lip (*'Am. Journ. Med. Sci.,'* 1913, CXLVI, p. 223).—**L. M. Kahn** records a case in a boy, aged 3 years. There were no other deformities in the family. The mucosa of the lip on either side showed an oval puckering, in the centre of which a minute opening ran downwards and inwards towards the median line, the fistulæ ending blindly just under the mucous membrane of the lip on its inner surface. The entire length of each fistula was 1.5 cm. The fistulæ did not communicate and were separated by a thin partition, probably of fibrous tissue. Their openings were filled with glairy secretion. As the condition did not inconvenience the child excision was not recommended. Kahn could find only twenty-two other cases on record (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1907, IV, p. 52, and 1910, VII, p. 142).

J. D. ROLLESTON.

Infant disembowelled at birth; appendicectomy successful (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, p. 199).—**E. N. Reed** attended the confinement of a Mexican woman. The child was born spontaneously but with the whole intestine, both large and small, outside the abdominal cavity. The bowels had passed along inside the cord for about 2 inches and had escaped through a rupture in its wall. The bed was filthily dirty, and the intestines were thickly sprinkled with bits of straw, feathers, crumbs of food and fæcal matter from the mother. The cord was ligated, the placenta delivered, and the baby wrapped in the cleanest thing that could be found. The infant was sent to hospital and two hours after birth was placed upon the operating table. By this time the bowels were matted together by fibrinous adhesions, which included many particles of the *débris* mentioned above. They were cleansed gently, but the cleansing could not be thoroughly carried out. The appendix, three-quarters of an inch long, seemed to be contused and swollen and consequently was ligatured and removed. The umbilical opening was enlarged, and the intestines were returned. A hurried closure was made with one layer of buried catgut and one of silkworm-gut. The child made an uneventful recovery, save for one small stitch-abscess.

T. R. WHIPHAM.

Congenital defect of abdominal muscles with anomaly of urinary apparatus (*Edin. Med. Journ.*, 1913, xi, p. 127).—**L. Thatcher** records a case in a male child who died from broncho-pneumonia at the age of three weeks. The abdominal wall was very lax, the abdominal muscles being completely absent in their lower and antero-lateral parts, and the thorax markedly prow-shaped anteriorly. Testes undescended. There were some asymmetry of face and pinnæ, and slight congenital dislocation of the hips. There was marked hypertrophic dilatation of the bladder, with dilatation of the ureters and hydronephrosis without any organic obstruction. Thatcher has found only thirteen other similar cases on record. **J. D. ROLLESTON.**

Cases of congenital morphinism (*Charlotte Med. Journ.*, 1912, LXV, p. 95).—**G. E. Pettey** remarks on the sterility of opium-using women, but states should children be born to them, they usually die on the third day of life. This, he argues, is because the supply of morphia to the child ceases at birth, causing shock and collapse. He holds that in such cases morphia should be administered to the infant. Some interesting cases are reported giving the detailed treatment of several mothers and their infants.

REGINALD MILLER.

A study of fourteen cases of alcoholism in children (*Med. Rec.*, 1913, LXXXIII, p. 433).—**A. Gordon** studied alcoholism in fourteen children free from any morbid hereditary transmission, their ancestors being remarkably healthy and long-lived. Nine of the fourteen became orphans at an early age, and were boarded out with unsatisfactory families where all forms of sexual and social vice abounded. The children, aged from 8–14 years, quickly imitated the habits of their elders by tasting alcoholic drinks; they soon acquired a craving for spirits and rapidly drifted into the ranks of the petty criminal. Five developed epileptic convulsions; tremors, twitching and insomnia were present in all. Mentally they were brutal, and all of them had a tendency to attack and injure. One of them developed a penchant for killing chickens. One was a pæderast. All were masturbators. Five were children of parents who had suffered severe financial losses and who had taken to drink, and were imitated in this by their offspring, with the same results as described for the nine orphans.

CHRISTOPHER ROLLESTON.

Note on the Wassermann reaction in lead poisoning (*Australas. Med. Gaz.*, 1913, XXXIII, p. 300).—**J. L. Gibson** found this reaction well marked in a girl, aged 7 years, suffering from plumbic ocular neuritis. Administration of mercury for supposed syphilis made the condition worse, and the author draws attention to the frequency of the Wassermann reaction in plumbism and the danger of too rapid administration of mercury.

F. R. B. ATKINSON.

Sodium chloride fever in infants (*Monatsschr. f. Kinderheilk.*, 1913, XII, p. 386).—**G. Jörgensen**, as a result of examination, believes that the fever arising after cutaneous injection of physiological NaCl solution is of bacterial origin.

F. R. B. ATKINSON.

Early symptoms of poliomyelitis, with special reference to a new pre-paralytic symptom (*California State Journ. of Med.*, 1913, xi, p. 443).—**J. A. Colliver** draws attention to a new pre-paralytic symptom which is

a peculiar twitching, tremulous or convulsive movement of certain groups of muscles lasting from a very few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet it has in it some of the elements of all. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. This condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement just like a chill, during which time the child is apparently unconscious with eyes set for a few seconds, and then he apparently becomes perfectly normal again. This short unconscious spell with eyes set may occur without noticeable convulsive movements. The author has observed it as a twitching of the lips with tongue running in and out and working of jaw, preceding bulbar cases.

J. ALLAN.

A sporadic case of acute poliomyelitis of the meningeal type (*Med. Chron.*, 1913, xxvi, p. 213).—J. E. Rivera.—A boy, aged 14 years, previously healthy, woke up one morning with a sore throat and shortly afterwards became unconscious. On admission to hospital there was no paralysis nor head-retraction, but Kernig's sign was positive on both sides. There were intense optic neuritis, bilateral Babinski's sign, and loss of knee- and ankle-jerks. The cerebro-spinal fluid was under increased pressure, clear and colourless, reduced Fehling's solution and was quite sterile. On discharge from hospital about six weeks after the onset the general condition was good, but there was still blindness of the left eye. The discs were pale, but there was no sign of optic atrophy.

J. D. ROLLESTON.

The occurrence of meningeal reactions in the course of poliomyelitis (*Med. Press*, 1913, II, p. 364).—V. Hutinel points out that the *medullo-virus* may be responsible for a whole gamut of misdeeds, from reactions so slight and vaguely defined as to be quite ignored up to the most formidable developments. When such meningeal reactions, medullary or encephalic, present themselves, do not make undue haste to formulate a pessimistic prognosis to which the future will furnish a humiliating contradiction; also do not believe too readily afterwards that you have arrested the progress of a case of tuberculous meningitis.

J. ALLAN.

Atypical infantile paralysis (*New York Med. Journ.*, 1913, xcvi, p. 1213).—F. L. Wachenheim records six cases in children, aged from 9 months to 2 years: (1) Flaccid paralysis of left deltoid with rapid and complete recovery. (2) Onset with fever and gastro-intestinal symptoms, followed by stupor and absence of reflexes in all extremities; mental condition became normal in a few days, but there was complete paralysis of one deltoid. (3) Slight facial paresis, sweating localised to face, and complete paralysis of muscles of shoulder girdle and neck; R.D. in both trapezii; other muscles little, if at all, affected, but absence of knee-jerks. (4) Polio-encephalomyelitis, with main lesion in the pons. (5) Paralysis, with tachycardia of seven weeks' duration. (6) A case of meningitis; mental impairment and optic neuritis resulted, but there were no peripheral palsies.

J. D. ROLLESTON.

Attempts to transmit poliomyelitis by means of the stable-fly (*Stomoxys calcitrans*) (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 461).—

W. A. Sawyer and **W. B. Herms**, as the result of seven experiments in which the conditions were varied, were unable to transmit poliomyelitis from monkey to monkey through the agency of the stable-fly. Further experimentation may reveal conditions under which the stable-fly can transfer poliomyelitis, but the negative results of the authors' work and of a second set of experiments by Anderson and Frost render it doubtful that the fly is the usual agent in spreading the disease in nature. On the basis of the evidence now at hand, persons suffering from poliomyelitis or convalescent should be isolated, and attempts be made to limit the formation of human carriers and to detect and control them. Screening of sick-rooms against the stable-fly and other flying insects is a precaution which should be added to those directed against contact infection, but not substituted for them. The measures used in suppressing the house-fly are not applicable to the control of the stable-fly owing to its different habits and food supply. Methods should be devised for diminishing the number of stable-flies, as they are a great annoyance to cattle, and in all probability are capable of transferring and inoculating a number of the diseases of animals.

T. R. WHIPHAM.

Choreiform manifestations in poliomyelitis (*'Arch. de méd. des enf.'*, 1913, xvi, p. 881).—**A. Netter** and **L. Ribadeau-Dumas**.—Poliomyelitis may be associated with choreiform movements of varying amplitude. As a rule, they precede the paralysis, and are of short duration, but sometimes may last for days or even weeks. Analogous symptoms preceding the paralysis are much more frequently found in monkeys who have been inoculated with the virus of poliomyelitis. It is reasonable to suppose that in some cases these choreiform movements may predominate or occur without subsequent paralysis. Such cases would constitute a choreic infantile paralysis just as there are some cases of paralytic chorea. The writers record two cases in children, aged 6 months and 6 years respectively. The former died of infantile diarrhoea, and the necropsy showed diffuse inflammation of the cord and spinal meninges, most marked in the anterior cornua, especially of the lumbar and cervical enlargements.

J. D. ROLLESTON.

Ætiological study of chorea (*'Thèses de Paris,'* 1912-13, No. 298).—**G. Graboïs** gives the following statistics of 136 cases of chorea from Hutinel's service at the Hôpital des Enfants Malades from 1907-1913: 87 were girls, 49 boys. The severest cases were found between four and ten years. In 8 per cent. there had been chorea in one of the parents, and in 27·2 per cent. there was a neuropathic heredity. Rheumatic heredity was present in 15 per cent.; 22·7 per cent. showed some evidence of rheumatism. In 40 per cent. there was organic disease of the heart, 35 per cent. of whom had had rheumatism, while the remainder were due to other infections or the cause was unknown. Tuberculosis was found in the ascendants or direct collaterals in 34·3 per cent.; 31 per cent. gave a positive intradermo-reaction to tuberculin without clinical tuberculosis, and 5·2 per cent. had clinical tuberculosis. Heredo-syphilis was present in 25 per cent., but was usually associated with heart disease, rheumatism, or other infections.

J. D. ROLLESTON.

A contribution to the study of the organic theory of Sydenham's chorea (*'Arch. de méd. des Enf.'*, 1913, xvi, p. 481).—**Deléarde** and **Valette** have studied clinically a series of twelve cases of Sydenham's chorea with a view to determining the frequency of the occurrence in this

malady of signs regarded as signifying organic disease. These cases were tested for the various reflex changes and disorders of movement used for examining the cerebrum and cerebellum. They conclude that the theory that chorea is due to organic changes in the nerve-cells of the brain is not supported by their observations, for clinical signs of organic disease were not found with sufficient frequency or constancy. REGINALD MILLER.

A streptococcus producing symptoms of chorea in a dog (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1376).—G. F. Dick and T. Rothstein report that they have isolated from the throat of a patient with chorea of five years' duration a streptococcus which, grown on blood-agar, forms a heavy dirty white growth with a border well raised above the medium and a wide zone of hæmolytic. It grows aerobically and anaerobically equally well and on all ordinary media. It ferments milk with a slight acid production, but no coagulation. It does not ferment dextrose, lactose, mannite, inulin or saccharose. As grown on the surface of agar slants the streptococcus is a Gram-positive organism occurring in irregular groups and short chains with an abundance of Gram-negative forms which gives the impression of a mixed culture. In milk it grows in extremely long chains, and staining fails to show a capsule. A dog which was injected intravenously with the growth from four agar slants developed choreic movements within twelve hours, but whether the organism was recovered from the dog's throat is not stated. A detailed report will appear in the 'Journal of Infectious Diseases.'

T. R. WHIPHAM.

The varieties and treatment of chorea (*Brit. Med. Journ.*, 1913, I, p. 1261).—F. Langmead finds in sodium salicylate our most valuable remedy. He believes in large doses of the drug, but does not endorse the massive doses recommended by Lees. During treatment the bowels should be freely opened, and this will help to avoid the risk of acid intoxication. The after-care of the choreic patient is very important. J. ALLAN.

School Hygiene.

School medical inspection in rural districts in Germany (*Journ. of State Med.*, 1912, xx, p. 590).—K. Dohrn.—School medical inspection is a valuable prophylactic measure against tuberculosis; it may also be of value in arresting the constant migration of the rural population into the towns. Rural school inspections are of peculiar value to the health official. By their means he gains, not only first-hand knowledge of the health conditions of the district, but also a valuable opportunity is placed in his hands for dealing promptly with discovered defects. He gets to know the cripples in his district and secures appropriate treatment for them. The mental defectives are, if possible, removed from the schools. The boarded-out children are supervised. Bathing facilities are provided, and the physical development of the stiff, loutish country child is promoted by the introduction of active school games. The services of the health nurse are invaluable.

J. ALLAN.

School planning, with special reference to the prevention of congestion (*Journ. State Med.*, 1913, xxi, p. 692).—S. Barwise, after a careful study of this question, concludes that all the class-rooms should be made in a single row with windows open to the air on opposite sides, and that a dwarf veranda should be made as the passage to connect one class-

room to another. To obtain through ventilation by means of windows on opposite sides it is necessary that the windows should be of a special design. The ventilators now take the form of what, in England, are known as "hoppers," which open 6 ft. from the floor. These direct the air upwards towards the ceiling. The air passes across the room, along the ceiling, and down out through the hopper on the other side. In passing through the room, eddies of fresh air are caused which completely change the air in the class-room, so that carbonic acid in a room never reaches above '8 parts per 1000. In addition to the continuous ventilation by the hoppers, the instructions to the teachers are that, when the children go out for play, the rest of the windows, which are made to swing on an axis, must be thrown wide open, so that, when they reassemble, the air inside is practically the same as that outside the building. It is obvious that by introducing this large amount of fresh air the difficulty of heating the schools is greatly increased, but this can be done by having the floor of the class-room kept at a comfortable gentle heat, say in the coldest weather from 80° to 90° F. This could be done quite easily by having a hollow concrete floor into which steam is injected. The condensed steam could be conducted back to the boiler and the water would be used over again.

J. ALLAN.

The architecture of open-air schools (*Med. Record*, 1913, LXXXIV, p. 880).—**J. V. van Pelt** considers the following conditions should be attained in such schools: (a) The ground should be sand or gravel, protected from the wind, but trees should not be too near the school. (b) The sun should enter into all the class-rooms during a part of every day of the year. (c) Odours should not reach the class-rooms. (d) Ventilation should be provided on two or more sides; an open gallery is advantageous. (e) The auditorium should be so situated that it can be thrown entirely open. (f) Class-rooms should have predominant unilateral light—i. e. the light on the left of the pupils should be stronger than that from other directions. (g) Class-room windows should be so arranged that any side from which a driving shower or a mist comes can be closed. (h) Class-rooms may have the floor warmed. (i) Steam or water vapour should be the means employed for heating the rooms; 40° C. is a maximum temperature for a floor surface. Special attention should be paid to the acoustics.

F. R. B. ATKINSON.

The place of the open-air school in preventive medicine (*Journ. State Med.*, 1913, xxi, p. 744).—**G. Newman** points to the value of the open-air school in the conservation of the health of school-children. In his opinion the open-air school could and should deal materially with the children during and after school life in five ways: (1) By nipping disease at its earliest and most incipient stages; (2) by preventing those things which followed disease and which were the causes of disablement and death; (3) by supplying an opportunity of repair for the debilitated, anæmic and unnourished child that was found in our great towns; (4) by nurturing the debilitated and backward child; and (5) by furnishing a new way of life for these children. It was much more than a combination of a school and a convalescent home; it was a process of preventive medicine by which the natural defences of the body might be reinforced and strengthened.

J. ALLAN.

The nutrition of elementary school-children (*Brit. Med. Journ.*, 1913, i, p. 1055).—**W. Spencer Badger** points out that clinical examina-

tion affords the only reliable means of estimating the child's nutrition. Among the common characteristics of malnutrition are expressionless countenance, mental dulness, mouth-breathing, blepharitis, loss of muscular tone, half-open eyes, blueness of the extremities, and a harsh, dry skin. Malnutrition has a close association with disease, sometimes preceding and sometimes following it. Heart disease particularly is a nutritional disorder in school-children. Dental caries has a wide-spread influence in producing malnutrition, and insufficiency of sleep is one of the prime preventable causes. The harmful effect of overwork operates mainly by reason of the work outside school hours being undertaken by the least fit and worst-fed children. Malnutrition is frequently associated with poverty, but in such cases the poverty is commonly found to be accompanied by thriftlessness, ignorance, dirt or neglect.

J. ALLAN.

Preliminary report on an outbreak of febrile disease in an industrial school (*'Brit. Med. Journ.,'* 1913, I, p. 1317).—K. M. Duncan gives an account of an outbreak of febrile disease in an industrial school at Preston. The illness was of sudden onset, marked by headache, epigastric pain, vomiting in mild cases of undigested food, but in severe cases of large quantities of a distinctly greenish or yellowish fluid, a temperature varying from normal to 105° F., by herpes labialis in a certain proportion, and in five cases by definite consolidation at the base of the lungs. In the very worst cases there was a true septicæmic condition. Three of the boys were found dead in bed, having retired apparently well the previous evening; four others died within twenty-four hours of the onset of headache or vomiting. The post-mortem findings and the bacteriological and agglutination results are given. Hypertrophy of the thymus and thyroid glands appeared to be common to the fatal cases.

J. ALLAN.

Inquiry into outbreaks of febrile illness, with rapidly fatal cases, occurring in a boys' industrial school near Edinburgh (*'Edin. Med. Journ.,'* 1913, x, p. 201).—C. McNeil and J. P. McGowan investigated these cases at the request of the Home Office. Three distinct clinical types were noted. The first is of short, acute and rapidly fatal illness; the second of pneumonia of a very peculiar and irregular character; the third is an uncomplicated but severe febrile attack. After giving illustrative cases in each group, the authors detail several symptoms which are common to all. They think that the clinical data indicate one morbid condition manifesting itself in three clinical types. This morbid condition resembles acute pneumonia more closely than any other, but deviates from the classical type. It may be described as a distorted pneumonia; and abortive or latent in the group of febriculas. The occurrence of these outbreaks over a course of years shows the existence of these peculiar forms of pneumonia, not merely in epidemic, but also in endemic form. Statistical data are given as to incidence of season, age, occupation, duration of residence in school; also as to duration of illnesses, contagion and recurrence. It is worthy of note that at no time did the staff or members of their families suffer from illnesses resembling those the subject of inquiry, either during the period of the different outbreaks, or at any other time. Similar outbreaks at other schools are considered, and the post-mortem findings are discussed at some length. Regarding conditions of environment, the authors express the opinion that the boys in this school are unduly exposed to cold, both from their too scanty clothing in the cold seasons, and also in the lack of heating arrangements in the dormitories and

passages of the institution. There is also an inadequate allowance of air-space in the dormitories, which may, to some extent, be mitigated by the free ventilation which is maintained. The authors advance the hypothesis that there is present and pre-existent in these boys an abnormal constitution of body, which, in the fatal cases, somewhat resembles the *status lymphaticus*.

J. ALLAN.

Control of measles ('*School Hygiene*,' 1913, iv, p. 131).—**J. Kerr**, at a meeting of the Medical Officers of Schools Association, contrasted scarlatina and diphtheria with measles, the two former not being disseminated to any extent by school attendance, which is the dominant factor in the spread of measles. The mortality in various countries was then alluded to. Prussia has had less mortality from measles than the United Kingdom, but three and a half times more mortality from diphtheria. Scotland also shows a greater measles mortality. As regards the character of the outbreak, measles is confined for a time to the members of one class, while in scarlet fever it is rare to find more than a couple of cases in one class without other classes being affected. By strenuous efforts to prevent the disease the form of measles outbreak tended to become like that of scarlet fever. Thus, in one school of 450 children, containing 170 infants, there were 15 cases of measles during April. At the end of April school closure was enforced for a month. During this month 24 cases occurred. Within five days of reopening 118 cases broke out. Here the infection must have been conveyed in the homes. One girl was found to have infected eleven others out of school. Contrasted with this, and supporting his first statement, Dr. Kerr related the case of a girl who attended school in an infectious condition and gave the disease to 207 children. The policy of watching the first cases and excluding others from the ninth to the fourteenth day simply defers the outbreak to a later date. Recurrent cases are rare, about 2·46 per cent. of all cases. The mortality is about 3·3 per cent. The average age of measles cases among the capitalist classes is seven to eight; among the proletariat under five. School closure will not influence the mortality. Parental notification must be adopted, and hospital treatment for bad cases. **L. R. Lemprière** said: An epidemic invariably follows when a case breaks out. The larger the epidemic the more serious and numerous are the complications. Therefore, epidemics are to be preferred in small private rather than in large public schools. Koplik's spots are useless in the control of the disease, and Meunier's sign is impracticable. Eighty-five out of every 100 unprotected individuals are usually attacked in any one epidemic, the largest number of cases occurring at the end of the fourth week. Floor space is always insufficient in public schools, and the early cases should be scattered in several separate wards, fresh cases added in turn. Only five cases should be allotted to one nurse. Confinement to bed should be enforced for twelve days. **W. Butler** advocated notification by the profession limited to the first case in the household. The contacts should be carefully controlled, and the class-room closed for a week, from a period of which the fourteenth day after the attack is the central day. Disinfection is advisable, as it necessitates cleansing. **E. W. Goodall**, however, from his experience at the Eastern Hospital, considered that elaborate disinfection was unnecessary, as the *materies morbi* is not readily conveyed by third persons or infected articles, and is not spread for any long distance through the air. Should measles be introduced into a scarlet fever or diphtheria ward, the children are all kept in bed, and a careful watch instituted for Koplik's spots and rise of temperature. On the

appearance of these symptoms the patient is at once removed from the ward, which is kept in quarantine for three weeks. **C. J. Thomas** said: Given an unprotected population, measles will spread whether there are schools or no. In Woolwich the borough was divided into two, in one of which school closure was carried out; in the other no such action was taken. Measles was only found to spread in the infant departments, and where closure was adopted the only result obtained was that measles tended to break out again and again, some classes having to close as often as three times in six months. If the schools be closed, no knowledge of the existence of the case can be obtained, and hence skilled nursing and supervision cannot be obtained. In Woolwich the mortality in the "non-closure" area was less than in the "closure" district. Measles are influenced by the holidays. Children who are confined to one district by school attendance wander abroad in the holidays to infected areas, where they acquire the disease. Raising the age of attendance would be of little benefit; the mortality in Scotland, where the age of attendance is higher than in England, is greater. **Armstrong** said that, owing to the efforts at control, the age at which measles were acquired was postponed, and consequently the number of unprotected boys entering a public school had risen by 12 per cent. Mortality depended, not upon age, but upon environment, the disease being not especially fatal to children living hygienically. **Attlee's** experience at Eton is as follows: Sixty cases a year out of an attendance of 1000. Thirty-three per cent. of the entrants are unprotected by a previous attack, and acquire the disease during school-life. Most of the epidemics occur during the Lent term. There are very few bad cases at Eton, the mortality being only 0.5 per cent. **Swift and Procter** stated that epidemics occurred once in every five years, and neither had ever seen measles occur twice in the same child. Warmth, antiphlogistine, and rest in bed for eight to ten days were recommended by Swift, who also made the interesting statement that after measles puny children often began to thrive, a result which he attributed to the killing of the latent germs of disease by the septic organisms.

CHRISTOPHER ROLLESTON.

Tuberculosis and other diseases in schools and colleges (*New York Med. Journ.*, 1913, xcvi, p. 165).—**S. A. Knopf** says that 10 per cent. of tuberculosis among school-children is due to bovine infection, which could be eradicated by the foundation of a Federal Public Health Department and by the enforcement of bovine laws. In the East River Homes, New York, well-lighted and ventilated homes are provided for tuberculous families with roof gardens for open-air treatment and open-air schools. In New York City there are 14 open-air schools containing 626 children from all classes of society; in the rest of the States there are 41, accommodating 1229 pupils. In these schools improved nutrition, due in part to the food received and increased hæmoglobin content out of proportion to quantity and quality of the aliment provided, are noted. In the New York schools 100° F. was the lowest recorded temperature. Open-air schools and open-air instruction are absolute necessities for the eradication of tuberculosis in the coming generation. In higher grade schools singing should be practised in the open air, as of all exercises it is the most conducive to health. Home-lessons should be studied either on a porch or in a space before an open window enclosed by a canvas-covered frame. The author describes seven respiratory exercises which should be performed four to six times a day, on getting up and on retiring. These exercises are not recommended for children already tuber-

culous, or for very delicate children. They differ little from those already in use in English elementary schools.

CHRISTOPHER ROLLESTON.

Rest and exercise for the tuberculous and the predisposed child at school (*'Med. Record,'* 1913, LXXXIV, p. 875).—S. A. Knopf shows various diagrams of different exercises advised by him for expanding the chest, and also of an open-air study and window-tent. The tent is attached to the window, and extends $4\frac{1}{2}$ ft. inside the room, and is so constructed that the air from the room will not enter or mix to any extent with the air in the tent.

F. R. B. ATKINSON.

The prophylactic and therapeutic value of fresh air in schools and hospitals, including heliotherapy (*'Med. Record,'* 1913, LXXXIII, p. 1013).—J. W. Brannan states that at Sea Breeze cases of surgical tuberculosis are treated by open-air methods, the children sleeping on the open porches and bathing daily in the sea. Open-air treatment was adopted for acute pneumonia cases with great success; the mortality by ordinary hospital methods was 25·2 per cent., but after nursing on open balconies it sunk to 10·7 per cent. This good result was attributed to the cold air raising the blood-pressure. The restlessness and delirium of alcoholic patients are much diminished by this method. In asylum work the tremulousness, anorexia and mental depression of insane alcoholics disappear very rapidly under open-air treatment. The first open-air schools in America were those at Providence and Franklin Park, Boston. The latter is situated on the roof of a refectory, protection from storms being secured by curtains. Of 37 tuberculous children, 30 after six to twelve months' treatment were able to re-enter ordinary schools, while delicate anæmic children gained six pounds in weight apiece, and increased their hæmoglobin content from 71 per cent. in the autumn to 85 per cent. in the spring. Equally good results have been obtained in schools where no extra nourishment has been given. Rollier, at Leysin (situated 4500 feet above sea-level), exposes his patients gradually to the influences of the sun; beginning with five minutes three times a day, the exposure is gradually increased till the whole daytime is occupied with the development of pigmentation. The case progresses until recovery is complete. In countries where there is no sunshine radiotherapy and Bier's congestion treatment should be tried.

CHRISTOPHER ROLLESTON.

Investigations on albuminuria and blood-pressure in school children (*'Norsk Mag. f. Lægevid.,'* 1913, LXXIV, p. 1601).—J. Bugge examined 550 boys, aged from 7 to 16 years, and 526 girls, aged from 7 to 14 years, in two of the communal schools of Christiania. One hundred and sixty, or 14·9 per cent., showed albuminuria. Three varieties are distinguished, viz. transitory, orthostatic and nephritic, the percentage frequency of which was 4·0, 3·5 and 1·1 in boys, and 5·1, 13·3 and 1·0 in girls. The much greater frequency of albuminuria in girls (21·1 per cent.) as contrasted with boys (8·9 per cent.) was due almost exclusively to the prevalence of orthostatic albuminuria in girls. The subjects of orthostatic albuminuria often had no symptoms. Many of them were anæmic, but they were not more subject to acute infectious diseases or to tuberculosis than other children. The blood-pressure was measured by Riva-Rocci's instrument with a 12 cm. armlet. It was found that the blood-pressure rose steadily with the age of the child. Up to eleven years it was higher in girls, and subsequently it was higher in boys. Both in orthostatic and in nephritic albuminuria the blood-pressure and heart were usually normal. As a rule, the blood-pressure was as high in

the recumbent as in the vertical position, both in the orthostatic cases and in normal children. Bugge could not confirm Jehle's theory that orthostatic albuminuria was always due to lordosis of the lumbar vertebræ, but found that lordosis often occurred without albuminuria, just as albuminuria was frequently present without lordosis. A large number of boys were examined, both before and after gymnastic exercises and football. In 21 per cent. of the healthy boys gymnastics produced albuminuria, a little more frequently in boys with lordosis than in others, and casts were often found. After one hour's football, albuminuria was found in 10 per cent. of the healthy boys, and was more frequent when there were few players in the game. Gymnastic exercises generally increased the amount of albuminuria in albuminuric cases, and often caused casts to appear.

J. D. ROLLESTON.

Pediculosis among school-children (*New York Med. Journ.*, 1913, xcvi, p. 656).—J. Sobel summarises the importance of the louse from several standpoints: (a) As an index to the cleanliness of the household. (b) As a causative factor in glandular enlargements, and as a predisposing factor of tuberculous adenitis. (c) Indirectly it sets up purulent infections—*e. g.* impetigo, furunculosis, folliculitis. (d) As a disease carrier, Goldberg and Anderson showed that the virus of typhus is contained in the body of the infected louse, and may be transmitted by subcutaneous injection of the crushed insect. It is innocent, however, as regards the transmission of poliomyelitis. (e) It disturbs the general health by causing insomnia and irritability. Mental depression caused by the taunts of other school-children is frequently noticed. Efficient control is rendered very difficult in New York, owing to the migratory character of the population. Exclusion is only enforced when living vermin are found. The exclusions for lice have not decreased, while for other contagious diseases—*e. g.* scabies, impetigo, and ringworm—there is a notable diminution. The former ailments can be, and are, controlled by physicians. Inspections at monthly or, if necessary, at more frequent intervals are made of all verminous children. A mixture of equal parts of kerosene and sweet oil is used as a parasiticide. Nits should be removed by a fine-toothed comb or by sandpaper. Clothes and bedding in the homes were found to be very filthy in 87 out of 161 cases, dirty in another 29, fairly clean in 23 cases, and very clean in only 22. Overcrowding occurred in 60 to 70 per cent. of the households. It is absolutely necessary, therefore, to cleanse the homes and all the inhabitants, and not to spend all one's attention on the school and scholars. Pediculosis is very rare among the coloured population, the percentage being only 0.5 per cent., as compared with 16.5 among the whites. This is due to the fact that negroes are constantly combing their hair in order to get rid of the kinks. Negroes with straight or curly hair are more frequently verminous. The homes of the coloured are cleaner than those of the alien white man. Bags should be provided for the hats and clothes of verminous children.

CHRISTOPHER ROLLESTON.

Diagnosis and treatment of skin diseases in school-children (*Clin. Journ.*, 1913, xlii, p. 110).—F. Gardener places the incidence of disease in the Edinburgh Skin Clinic in the order of their prevalence as follows: impetigo, ringworm, pediculosis, scabies, dermatitis, seborrhœa, and psoriasis. Impetigo contagiosa is characterised by the superficial character of the lesions and the localisation to scalp, face and hands. Its association with pediculosis capitis is noted. Failure to cure is due to ignoring the concomitant pediculosis or seborrhœa. The latter is cured by adding 10 gr. of

sulphur to the antiseptic ointment. The pediculus pubis may affect the eyebrow and eyelashes in young children. In regard to scabies the author emphasises the importance of examining the whole family. Urticaria is sometimes a complication and may conceal the scabies. Sulphur should not be used for more than three days at a time. Alopecia areata is an infective condition, and is characterised by thinning of the skin of the scalp and by the fact that the new hairs are white and atrophied. The disease is aggravated and spread by pediculosis. The points of election for seborrhœa are the auricles, behind the ears, the neck, the sternal and interscapular regions, and especially the flexures of the joints, *e. g.* elbow and groin.

CHRISTOPHER ROLLESTON.

The Montessori method from a physician's standpoint (*Med. Record*, 1913, LXXXIII, p. 691).—**G. W. Jacoby** describes this system as one which enables normal children of four or five to compete on equal terms with children who have already gone to school for two or three years; as one which makes it possible for psychically deficient children to compete with their normal comrades; as one which ensures model discipline and enables the pupil to think and act independently. Children are allowed to busy themselves with any one thing for as long a time as it interests them. Reference is then made to Itard, who reclaimed the Savage of Aveyron, to Voison, Séguin and Guggenbald, and it is shown that the partial failure of these pioneers was due to a faulty method of diagnosis rather than to faulty technique. All mental development depends upon attention, which is aroused in varying degrees. A concept may impinge only upon the periphery of the field of consciousness—perception, or upon the fixation-point of consciousness—apperception. Apperception is active when the process is associated with the feeling of self-performance, passive when a psychic happening forces itself upon one. There are three grades of feeble-mindedness: (a) Power of directing attention to various objects of the outer world exists, but there is a failure in giving the necessary clearness and distinctness to the resultant idea. (b) Passive attention may be aroused, but no spontaneous development of active apperception takes place. (c) Passive attention is wanting, and in this class education is impossible. Passive is converted into active attention by inducing the child to make a selection between various objects. In the Montessori system the child is taught to recognise common objects by touch, then to compare them with other articles, thus learning to choose and so to judge. The author advocates the thorough testing of the method by the establishment of special schools and houses of childhood, and not by trying to amalgamate it with Froebel's system. It is specially suitable for the mentally inadequate, who require individual diagnosis and training.

CHRISTOPHER ROLLESTON.

Feeble-mindedness and school-children (*Med. Record*, 1913, LXXXIV, p. 329).—**E. Bosworth McCready** divides the feeble-minded into (a) morons, (b) imbeciles, and (c) idiots, and each of these classes into high, medium, and low grades. The restriction of marriage among the unfit would only lead to the production of illegitimate children, and as the little knowledge possessed on the subject has been derived from animal experiment, where physical and not ethical and mental qualities are concerned, the time cannot be ripe for the state regulation of marriage. The writer also condemns sterilisation for the encouragement which it would give to illicit intercourse, and for its uncertainty. Segregation is strongly recommended. Normal children should be boarded out in private homes instead of public institutions, leaving these

for the accommodation of the mentally deficient. In ordinary schools aments only learn in a parrot fashion. Long school hours are irksome, consequently they become restless, troublesome, and are easily excited to mischief, which frequently brings them into the juvenile court. They are also very prone to infectious diseases and tuberculosis. Defectives should only remain in graded classes till their actual mental status is settled. The slight accomplishments which they acquire in these classes lead employers to think them normal; positions are therefore offered, but are not long retained, with the result that the unfortunate ament joins the ranks of the unemployed and the criminal. Ordinary public schools are therefore quite unsuitable, and graded classes should be reserved for the merely dull and backward. Each child should on admission to school be examined by a medical man expert in normal and morbid psychology.

CHRISTOPHER ROLLESTON.

The Binet-Simon tests (*Edin. Med. Journ.*, 1913, *xi*, p. 113).—A. Dingwall Fordyce reviews some of the recent literature regarding the tests recommended by Binet and Simon for ascertaining the mental level of the child, and for discriminating between the child who is educationally backward but of normal intelligence and the child whose intelligence is below the normal. A short description of the various tests employed is given.

J. ALLAN.

The need of psychologic clinics in connection with the public schools (*Arch. of Ped.*, 1913, *xxx*, p. 197).—L. P. Clark states that from the mentally deficient children the epilepsies and functional disorders of later life are developed, while from the neuropathic are recruited the phobias, obsessions and adolescent insanities. The neuropathic scholar must, therefore, be studied in the school, for it is in such institutions that the future patient is submitted to the strain and stress which may give rise to the abnormalities of adolescence and maturity. In New York there are 152 ungraded schools, in which 2700 abnormal children of all classes, from the idiot to the merely backward, are taught. The grossly defective should, however, be sent to resident institutions, and the field left to the neurotic. The family history of the latter should be thoroughly investigated with the help of social or field workers. According to the author, there is little difference between the neurotic and the delinquent child. The former does not lie, steal, or stay away from school, but lapses into infantile habits of depression, shyness, timidity, panics, fears and obsessions. The neurotic child may become a valuable member of society; the ament never. Therefore, if only from the utilitarian standpoint, it is necessary by psychologic investigation to separate those benign neurotic trends from the malignant which result in psycho-neuroses and incurable dementia. The problem is of much greater difficulty than that of the mentally defective, as each case demands individual study of the inner life, habits and personality. Psychologic clinics must be established to inquire into the family life and environment, which may have contributed to the child's nervousness, to test the judgment, will, and ethical sense, and finally to make a complete psycho-analysis.

CHRISTOPHER ROLLESTON.

Observations of the atypical children in Dr. Groszmann's school from the standpoint of the neurologist (*Med. Record*, 1913, *lxxxiii*, p. 106).—M. Neustaedter remarks that no one particular organic defect is the cause of amentia or backwardness, but in nearly all there is a combination of causes. In all cases a brain defect must be searched for. The physical

and mental states of twelve abnormals are described. Six of these were cases of cerebro-spinal syphilis, five of them being males and one a female. All these six cases were making fair progress in school. Moral defects were only present in three: one was untruthful, one a masturbator, and the other was liable to fits of passion. One case was obsessed by phobias. In all six cases the pupils were unequal, and reacted sluggishly, or not at all, to light. In three there was spastic paresis, and in two Hutchinson's teeth were present. General paralysis occurred in one of the fathers of these six children. The Wassermann reaction was negative in all. There were three cases of infantile cerebral paralysis, all of whom were backward rather than mentally deficient, and all of them suffered from spastic hemiplegia. Convulsions occurred in one case. The remaining three were examples of meningo-encephalitis, of psychical epilepsy, and infantilism. The case of psychical epilepsy resulted from an old encephalitis, which came on with convulsive seizures between the second and third year of life. There were slight facial paralysis, diminished motor power in all extremities, and associated movements of both hands. The child was liable to fits of temper, was a habitual masturbator, and was very intelligent, being several years in advance of children of her own age.

CHRISTOPHER ROLLESTON.

Medical gymnastics considered as a prelude to physical education in the treatment of mentally deficient children (*Med. Press and Circ.*, 1913, I, p. 523).—**E. F. Cyriax** points out that the chief objects of medical gymnastics in cases of mentally deficient children are to aid in developing efficiency of the motor, sensory, and psychic elements of the cerebro-spinal system, the muscular system, the sympathetic system, and also to improve the constitution as a whole by stimulating circulation, respiration, digestion, etc. Improvement is attained by means of a variety of movements that may be classified as follows: (A) Passive manipulations—(1) mechanical shaking and strong vibration applied over the brain and spinal cord; (2) friction on both sensory and motor nerves; (3) auditory and visual stimuli. (B) Active and passive movements of joints. (C) Various other manipulations and exercises not falling under either of the special groups (A) and (B). These manipulations and exercises are then considered in more detail. The importance of individualising the treatment of each case is emphasised.

J. ALLAN.

Surgery.

Syphilitic disease of joints and bones in children (*Med. Press.*, 1913, I, p. 657).—**O. Addison** deems it possible, if not probable, that many cases of syphilitic disease in children are acquired and not congenital, as confirmatory history of the disease in parents is often difficult to obtain, and the classical signs of a congenital infection, such as snuffles and a rash in infancy, scars at the angles of the mouth, sunken nose, Hutchinson's teeth, interstitial keratitis, etc., are conspicuous by their absence. In this way cases are usually diagnosed as being tubercular. Where any doubt exists the question can now be settled by means of a Wassermann reaction. Syphilitic epiphysitis (so-called) is nearly always present in a syphilitic stillborn child, and when present in a living child at birth commonly affects all the long bones. When it occurs in an older infant the baby often has been healthy since birth and one limb is first attacked, generally the upper arm, but usually most or all of the bones of the same or both arms become involved, though in a less degree. The lower limbs usually escape. The disease begins at the junction

of the diaphysis with the epiphysial cartilage, causing degeneration of the cartilage and imperfect ossification. Skiagraphs show a varying thickness of new bone beneath the periosteum throughout the whole length of the diaphysis, and large clear areas of bone absorption are usually present in the medulla, chiefly at its ends. If untreated this condition frequently goes on to separation of the epiphysis with a semi-acute arthritis, or if a secondary infection supervenes a suppurative arthritis; at the same time the disease in the shaft may spread to the soft parts, forming abscesses and sinuses, with secondary infection and suppurative osteomyelitis. Other conditions which occur after the age of infancy are (1) periostitis leading to the formation of nodes on the skull or long bones. The new deposit of bone, although beneath the periosteum, is not formed from it. A thickening of the compact bone takes place both on the surface and centrally towards the medulla. The new bone on the surface, if untreated, breaks down in a gummatous degeneration which rapidly spreads to the superficial tissue. (2) Osteomyelitis, which chiefly affects the long bones and is most marked at the ends of the diaphyses. Gummata appear in the medulla and diffuse osteitis occurs in the compact bone. The gummata readily break down and extend to the surface with the result that abscesses form in the soft parts, followed by sinuses leading to the centre of the bone, where sequestra are not infrequent. As a rule interference with the growth of the bone takes place. There are only two forms of syphilitic joint disease which are at all frequent in children: (1) Symmetrical serous synovitis (Clutton's joints), which in the author's experience is not so common as (2) gummatous synovitis. This is usually monarticular, but sometimes multiple, and mostly attacks one of the larger joints. The synovial membrane and peri-articular tissues are swollen, but there is no effusion into the joint; muscular spasm and wasting are marked; in fact all the signs usually associated with tubercular disease are present. Under the X-rays rarefaction of the epiphyses is generally seen, and a superficial layer of new bone is often present at the ends of the adjacent diaphyses, but the focus of absorption, so frequently present in tubercular disease, is absent. The condition is not common under the age of four. Symmetrical serous synovitis is most commonly seen in the knee-joints, though both elbows or hips may be affected. There is considerable effusion and a varying amount of synovial thickening, the condition being much more obvious in one joint than the other. Muscular spasm is absent, wasting slight, and the movements are free except for mechanical limitations. X rays show nothing characteristic.

T. R. WHIPHAM.

Fracture-dislocation of the elbow-joint, with lower epiphysis of the humerus dislocated forwards and radius and ulna dislocated backwards (*Med. Press*, 1913, 1, p. 637).—Aslett Baldwin operated on a girl, aged 10 years, for the above injury, which had been sustained five months before. After operation the elbow was bandaged up flexed and then bandaged to the child's body. In the after-treatment it is very important to avoid too early or frequent movements of the joint.

J. ALLAN.

Congenital absence of the radius, club-hand, and ectrodactylia (*Semana med.*, 1913, xx, 757).—Rivarola describes a case of this deformity in a boy, aged 10 years. The right arm was shorter than the left, atrophied and deformed. Radiography showed the absence of the head of the humerus; only three of the carpal bones were present, and the hand consisted of two metacarpal bones articulating and two fingers. No other member of the family had any similar deformity, and there was nothing in the heredity.

M. D. EDER.

Reviews.

UNDERSØGELSER OVER NYFØDTE BØRNS VÆGT (INVESTIGATIONS OF THE WEIGHT OF NEWBORN CHILDREN). By H. J. HANSEN. København, 1913.

THE author, having observed in his own country practice that the average weight of newborn babies was somewhat higher than that indicated by earlier authors for town babies, and being desirous of elucidating the grounds for the difference, has, aided by the service of the midwives in his district (Nykøbing), pursued an exhaustive statistical inquiry into the matter. From 1900 to 1910 he collected 5979 statements of the weight of newborn babies, of which 3084 refer to boys and 2895 to girls. The average weight of the boys was 3696 grm., that of the girls 3542 grm. The weights for both sexes were about 8-9 per cent. higher than in the case of town babies, and the frequency of very heavy babies was also much greater. In obtaining these results, the cases of twins and prematurely born children were not excluded.

He then proceeds to consider the various factors which might be held to affect the above results and conclusions. The relations between the weight of the children and the age of the mother and the weight of the children and their respective positions in the family are discussed. It appears from these results that the average weight of the children increases in general with the age of the mother, but with certain reservations. In the case of the first to sixth child, there is a maximum in the progression occurring mostly in the age-group of 30-34 years; thereafter the weight declines on the average. But in the case of the later children there is no apparent maximum, the average weight increasing steadily with the age of the mother. Further elucidation showed that the weight of a newborn child depends much more in general on the number of previous children than on the age of the mother.

With regard to the increase in weight with successive children, the author's tables show that there is a steady increase, which is greatest from the first to the third child, but only inconsiderable thereafter. After the fourth child the increase becomes irregular. The maximum weight due to the number of pregnancies and the maximum weight due to the increasing age of the mother fall together within the same age-group, namely, between 30-34 years. He further shows that the average weight of the children is much greater in the country than in the maternity hospitals of Copenhagen.

The author then set himself the task of determining whether there is an optimum period for the beginning of child-bearing. He arrives at the conclusion that the average weight is on the whole greater the older the mother is at the birth of the first child, except in the case of the later children (which are heavier when the mothers begin child-bearing early) and in the case where child-bearing is begun after the mother is 34 years old. The age-group 30-34 years seems to be the optimum period for the beginning of child-bearing.

With the intention of discovering what relation exists between the weight of the child and the economic condition of the mother, he arranged the families into four classes: well-off, comfortable, moderate, and poor. Rich and very poor were not considered. It appeared that the children of the families well off were in the majority of the cases above the average, those of the poor families below the average except in the case of the later children; the families comfortably off had children about as much below as above, but the moderately well off families were even further below the average than the poor.

As regards the question of illegitimacy, he considers that it is not merely this factor which reduces the weight of the children, but rather poverty.

The last point the author deals with is whether the weight of the children is related in any way with the month or seasons of the year. From the death-rate for all Denmark and the sick-rate in his own practice, he concludes that the mothers are strongest in September to October, with a fairly even rise and fall between, and weakest in March. From his tables he adduces that the weight of the children follows the general conditions of health and sickness throughout the year.

This extremely careful study of the weights of country children and the factors which influence them is of considerable importance, especially in view of the degree of attention which is now being paid to the mortality of infants.

F. L.

STAFFORDSHIRE COUNTY COUNCIL: ANNUAL REPORT OF THE SCHOOL MEDICAL OFFICER, INCLUDING REPORT OF THE SENIOR SCHOOL MEDICAL INSPECTOR FOR THE YEAR 1912. Stafford: J. & C. Mort, Ltd., 1913.

WITH the gradual development of the work of medical inspection of school-children, much can be learnt from perusing the reports of various school medical officers. As time goes on, and when such reports become more or less standardised, there will be accumulated valuable information which cannot fail to interest all engaged in pædiatric work. This report, in addition to facts ascertained in the course of routine inspection, contains several investigations on special points. These special inquiries deal with ringworm "epidemic" schools, heart cases, and mouth temperatures of school-children. Some modification of the method of medical inspection was introduced towards the end of the year. The new plan involves the repeated visiting of schools for the purpose of revision of the ailing children—not only a very laudable object, but one which should prove of untold benefit to the school-child.

J. A.

RUTLAND COUNTY COUNCIL EDUCATION COMMITTEE: ANNUAL REPORT OF THE SCHOOL MEDICAL OFFICER FOR THE YEAR 1912. By CHRISTOPHER ROLLESTON, M.A., M.D.Oxon., M.R.C.P.Lond., M.R.C.S.Eng., County Medical Officer of Health and School Medical Officer. Leicester: W. Thornley & Son.

WE have received a copy of the above report, which gives an account of the progress of school medical inspection in Rutlandshire. The method by which the inspection is carried out, and the means taken for endeavouring to secure for children found defective suitable treatment, are described. A pleasing feature is the high percentage of attendances of parents at the medical inspection, from whom some useful information has been obtained. There seems, however, disinclination on the part of some to have defects remedied, and in certain parts there is a strong prejudice against operative treatment for tonsils and adenoids. The sanitary condition of some of the schools is not all that could be desired. Next year Dr. Rolleston hopes, in addition to the routine inspection work, to examine the following additional groups: (1) All children applying for labour certificates; (2) all children employed out of school hours. We have perused this report with great interest, which should be shared by all engaged in the study of child-life.

J. A.

L'ENSEIGNEMENT MÉDICAL À PARIS, 1913-1914 (MEDICAL INSTRUCTION IN PARIS). Published by La Presse Médicale. Fig. 22. Pp. 195. Paris: Masson et Cie. Price $\frac{1}{2}$ fr.

THIS useful guide to the various hospitals and medical attractions of Paris should be in the hands of every medical man who visits the French capital. The times and places where lectures, laboratory courses and clinical instruction are given are clearly set out under various headings, such as Anatomy, Pathology, Medicine, Diseases of the Heart, Diseases of Children, Gynæcology, Therapeutics, Neurology, Surgery, Urology, Ophthalmology, Laryngology and Dermatology. At the Laennec Hospital M. Rist will, if there be a sufficient demand, give a course of clinical instruction on tuberculosis at a date to be fixed later in the session 1913-14 in English. The illustrations of the clinics are attractive and there is a useful map.

H. D. R.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL, PHILADELPHIA. Vol. I. Edited by ASTLEY P. C. ASHHURST, M.D. Philadelphia: Press of Wm. J. Dornan, 1913.

THIS volume contains a large number of instructive papers by members of the visiting and resident staff of the Episcopal Hospital. Of special pædiatric interest are the following: "A Case of Carbolic Gangrene in a Child," by J. W. Moore; a number of papers on fractures of the bones of the forearm in children, by the editor; two papers on bone-cysts, by the editor and L. H. Mutschler respectively; "Pseudoglioma in Children," by Frederick Krauss; "A Report of Two Cases of Choroideremia in One Family," by H. G. Goldberg; "A Case of Suppurative Peritonitis of Unknown Origin simulating Meningitis," by J. de J. Pemberton; and a paper on "Vaccination and its Discoverer," by T. R. Currie.

J. D. R.

Correspondence.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

DEAR SIR,—I read with much interest the "Case of Corneal Ulceration associated with the presence of Spirilla and Fusiform Bacilli" reported in the BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 537, by Drs. Goudie and Sutherland.

It was an extremely rare case, and I was surprised to see that the spirilla and fusiform bacilli were not recognised as being those of Vincent's angina, the bacillus xerosis and staphylococcus evidently being a secondary infection.

It has been my privilege to have seen a large number of patients infected by Vincent's organisms, and the infection has been in various parts of the body, such as the tonsils, cheeks, nose, ears, anus, rectum, vulva, etc., but I have never seen a case with the infection in the eye.

Vincent's angina is a common condition in children who have a very low resistance. These cases are often overlooked, as very few physicians make smears from these patients.

The organism is anaërobic, and under these conditions Dr. Matthias Nicholl, of New York, has succeeded in growing it from a number of cases.

Trusting that the criticism will be accepted in the manner intended,

I am,

Birmingham, Alabama;

December the 27th, 1913.

Very sincerely yours,

C. C. McLEAN.

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Original Articles.

A CONTRIBUTION TO THE STUDY OF A GROUP OF
CASES OF CHRONIC RECURRENT DIARRHŒA IN
CHILDHOOD.*

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Ormond Street.*

IN bringing forward this paper we feel that we ought to explain that only the gravity and particular interest of the group of cases, and the fact that we have some pathological data of value with regard to them, has encouraged us to embark upon such a well-known subject as the occurrence of diarrhœa in childhood.

The group of cases we are dealing with seems to us clinically to be a definite one, and we will introduce the subject by a brief outline of some of the chief features as they have impressed us.

The first illness is usually a gastro-enteric attack in infancy, the result of some alimentary infection, or associated with some acute

* A paper read before the Medical Section of the Royal Society of Medicine on October the 28th, 1913.

illness such as measles, whooping-cough, or broncho-pneumonia. During this attack there may be some vomiting, but as a rule diarrhœa predominates; the motions may be green or blood-stained, there is much mucus, and later their character is often described as "porridgy." Nourishment is taken badly, but there is often a craving for water. Recovery is slow and tedious, but there is no remarkable fever. Quite early in the convalescence it is discovered that although the child may have taken milk food well before the illness, or have managed with ease the ordinary diet of an infant between one and two years, now the least departure from extreme caution results in an exacerbation of the symptoms. Upon this point we lay much stress, for we have met with examples which, had it not been that they were under our own observation, we should hardly have realised that such extreme care could have been needed. To some, milk is especially obnoxious; for others, it is the amount of food, or some apparently simple variation in diet designed to improve their weight and strength, or lastly, some obvious but slight error that may bring about a speedy relapse.

Clearly associated with this is the extreme liability to such relapses after what has seemed to be comparative recovery.

Though usually due to diet, they may also follow chill or over-fatigue.

Whatever the cause, this is abundantly clear—that however trifling the exciting factor, the illness will be prolonged and intractable. When the condition has existed for some years there is a decided resemblance in the appearance of these children. They are anæmic, soft, and very weak on their legs. The abdomen is large and tympanitic and in bad cases infantilism is striking. One extreme case in adult life at the age of twenty-four seemed like a girl of sixteen years, and though quick and shrewd, was stunted and childish in frame.

We can hardly wonder that such a result occurs when we mention that one of our cases weighed $24\frac{1}{2}$ lb. at eleven months, 17 lb. at two years, $17\frac{1}{4}$ lb. at three years, and $25\frac{1}{2}$ lb. at four years of age.

Diarrhœa is not always constant in any particular attack; there may be intervals of constipation which may be associated with alarming meteorism and cardiac failure. The stools then are often quite colourless. We have never observed jaundice or even a suggestion of its occurrence in any of our cases.

With this brief introduction we now turn to our clinical cases. The first case, a fatal one, is the one which has chiefly led us to make this contribution, and has been followed for some years both

in the out-patient and in-patient departments of the Children's Hospital.

We are indebted to Dr. A. E. Garrod for the use of the notes while under his care.

CASE 1.—A. H.—, male, aged 9 years at the time of his death, had an attack of enteritis when aged one, which lasted eight months and was associated with severe diarrhoea and abdominal swelling. In this illness he was treated at the Tottenham Hospital. He was one of seven children, another dying as an infant of diarrhoea. He came first to the out-patient department on July the 11th, 1908, when aged five, with a history of an attack of diarrhoea, which had already lasted three months. At its worst, blood had been passed and the motions were green. In the last weeks there had been sickness. He was wasted and pale. His tongue was clean and moist. His weight was 27 lb. The abdomen was slightly distended, but no masses could be felt. The spleen was not enlarged, but the liver could be felt $1\frac{1}{2}$ in. below the costal margin. The stools were large, light brown, soft and offensive. The lungs and heart showed nothing abnormal. His temperature rose once to 101° F. The provisional diagnosis of abdominal tuberculosis had been made, but Calmette's reaction was negative. Improvement was rapid with a milk diet and rectal lavage, salicylate of bismuth and opium, and he left at the end of the month for the convalescent home, where he remained another four weeks.

He was readmitted on December the 5th, 1908. Ever since his return home the stools had been loose, and diarrhoea with rapid wasting had recommenced six weeks before admission.

The boy looked very ill, with dark rings under his eyes, and was emaciated. A few enlarged glands were felt in the upper intercostal spaces. The abdomen was slightly distended and tender. The liver, as before, was enlarged. His weight was $30\frac{1}{2}$ lb. The urine (specific gravity 1014) contained a faint trace of albumen. The temperature was normal. This attack was more severe and there was daily vomiting. Calmette's reaction was again negative. The motions were at first four daily and then were reduced to two daily. Gastric and rectal lavage and lacto-bacillin brought about a gradual recovery in six weeks.

He was readmitted again in August, 1910, after an interval of about eighteen months, and remained until September the 8th, and again from October the 27th to November the 5th. On each occasion there had been a recurrence of diarrhoea with watery, light brown, offensive motions. There was extreme emaciation and he had a cadaveric appearance. His teeth, previously good, had now become much decayed. His abdomen was large and distended and some faecal masses could be felt. His weight was now 31 lb. The diet was milk, cream, rusks and custard. It was clear, now that the condition was gaining upon the patient.

He was again readmitted on February the 11th, 1911, with the diagnosis of dilated colon or possible abdominal tuberculosis. There was a chronic diarrhoea, three motions a day, with extreme wasting. The stools when formed were white. The tongue was clean. For the first three weeks there was fever ranging between 101° and 99° F., while for four months at the convalescent home it ranged between 99° and 97° F. In other respects no new feature was noted. His weight was now 31 lb. The diet was milk, fish and chicken.

Once again he was admitted on September the 3rd, 1911, and remained in the hospital until February, 1912. His condition on admission was worse than it had ever been before. A detailed examination of the stools was made by Dr. Graham Forbes, then Clinical Pathologist to the Hospital. They were alkaline and creamy in consistency and colour. Films showed fatty crystals, *débris*, and the following bacteria:

(1) Gram-negative bacilli were predominant: (2) Gram-positive diphtheroid bacilli and (3) Gram-positive micrococci were also present. No pus or blood-corpuscles were recognised.

Culture.—Plate inoculation from dilutions yielded only growth of Gram-negative bacilli in abundance, and colonies subcultured gave most of the reactions typical of the *Bacillus coli communis* group.

In October the diarrhœa had reached nine or ten motions a day, and the urine reduced Fehling's solution. The sugar tolerance was tested by administration of glucose, 1 dr. every six hours.

On November the 7th the reduction of Fehling's solution ceased.

December the 2nd.—Mr. Kellock did appendicostomy, after which the large intestine was washed out daily through the wound, and 4 oz. of paraffin injected daily through the appendix. The medicinal treatment had been bismuth. Lactobacillin, a pint a day, sanatogen, milk and arrowroot, and a fancy diet were all tried.

Improvement after the operation was striking and the weight increased from 27 lb. to 34½ lb. He left the hospital early in February better than he had ever been before.

He was readmitted in July, 1912, after a week's recurrence of diarrhœa and vomiting. This time the stools were noted to be very loose and pale and suggestive of celiac disease. The ward closing, he had to be sent out again at the end of the month and was readmitted for the last time on August the 30th, 1912. Diarrhœa had again returned but without vomiting, and his appearance resembled that of a child in the last stage of septic peritonitis. The temperature was 100° F., respirations 28, pulse 120. Weight 39 lb. The motions were frequent, very watery, offensive and light coloured. His liver was much enlarged. Vomiting developed after admission, and on September the 14th a sudden change for the worse occurred, with the development of severe abdominal pain and collapse.

The abdomen, previously distended, became flat but was not tender. General peritonitis was suspected and exploratory laparotomy done, but the patient never rallied and no explanation was found for the terminal symptoms.

The necropsy.—The necropsy was made twenty-four hours after death, and we will confine our description to the details that seem pertinent. The appendicostomy had been quite successful. There was no peritonitis nor excess of free fluid and the intestines were not distended.

The walls of the large intestine felt thickened, and on opening it, the solitary follicles were everywhere prominent and the mucous membrane thickened, corrugated and dotted with areas of very acute congestion. There was no breach of surface, but much mucus coating the membrane.

The cæcum and appendix shared in this change. There was general thickening also of the whole small intestine and the valvulæ were prominent, but the Peyer's patches were not enlarged. Between the valvulæ, the spaces were sown with raised areas resembling solitary follicles. Diffuse areas of acute congestion were present as in the large intestine. The stomach was also thickened, the mucosa in particular, and in addition was acutely congested, particularly at the pyloric end.

The gastric glands were unusually prominent. The lymphatic glands in the mesentery were considerably enlarged, pale and firm on section, as if unduly fibrous. The pancreas appeared natural.

The liver was very large, extremely pale and soft, and showed extreme fatty change. The gall-bladder and ducts were natural. The spleen was large, soft and pale. The kidneys showed pale cortices, but these were not swollen. The ureters and bladder were natural. The heart was very small and wasted, the lungs small but natural. No tuberculous glands were found in the thorax.

The particular features of the examination were: (1) Thickening of the walls with inflammatory changes affecting the entire alimentary canal; (2) the absence of striking

changes in Peyer's patches; (3) the absence of any obvious pancreatic lesion; (4) the abnormality of the liver; (5) the absence of any evidence of tuberculosis.

Microscopy.—As has been described, microscopic examination post-mortem revealed the presence of changes throughout the intestine; microscopic sections of the intestinal wall and of glands associated with the gut confirmed these findings.

On a careful examination it was found that, in addition to the more recent and acute changes present—possibly associated with the acute terminal infection referred to elsewhere—there was evidence of damage to tissues over a considerable period of time.

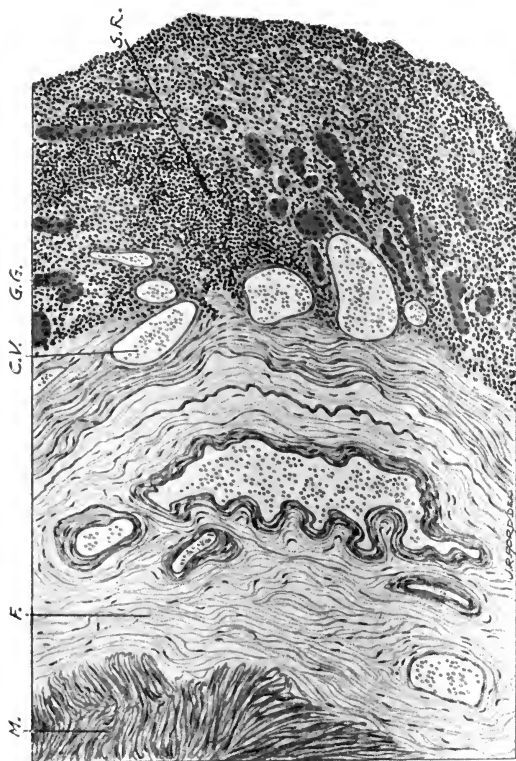


FIG. 1.—Section through inner coats of stomach wall. *S.R.*, cellular infiltration into mucous coat; *G.G.*, gastric glands cut excentrically; *C.V.*, congested blood-vessels; *E.*, fibrous hyperplasia; *M.*, muscle.

As will be seen, not only the intestine but glands secreting into its lumen were affected, and more remarkable still, changes were present in such remote organs as kidney and spleen.

In preparing microscopic sections Gaskell's method of embedding in formalised gelatine was used.

Sections were cut on a Sartorius carbon dioxide freezing microtome and stained: (1) with hæmalum and eosin to demonstrate general histology and congestion; (2) with hæmalum and Sudan III to show fats; (3) by van Gieson's method to show fibrous tissue. *Stomach*: There was acute congestion of the mucous membrane, with

here and there rupture of vessels and dehiscence of red cells on to the free surface of the mucosa. There was marked congestion also of the blood-vessels in the submucosa and extremely marked small round-celled infiltration between and amongst the gastric glands. In places the round cells were densely aggregated together into nodes of lymphoid tissue, and from these areas all proper secreting glandular tissue was absent. Such areas were always situated adjacent to zones where the inflammatory changes were most obvious.

There was definite increase in perivascular fibrous tissue in the muscular coat.

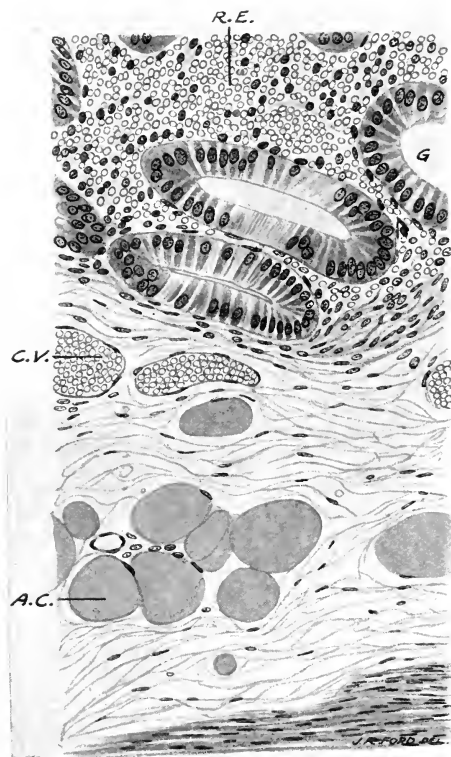


FIG. 2.—A section through mucosa and submucosa of large intestine (colon).

G., gland of large intestine; A.C., adipose cells; C.V., congested vessels; R.E., red cells extravasated into mucous coat.

Study under higher magnification of the gastric glands demonstrated the presence of early fatty changes in the oxyntic cells, the fat-droplets staining brightly with Sudan III (v. Fig. 1).

Duodeno-jejunal flexure.—Sections again showed very marked congestion of vessels, and, in places, slight extravasation, together with marked interstitial infiltration, and here and there, on the free margin of the section, advanced fatty changes in the cells of the secretory glands.

Jejunum showed marked small, round-celled infiltration, prominence of solitary lymph-follicles, and congestion and hæmorrhage on to the free surface of section. Altered red cells were seen staining somewhat diffusely, purplish with hæmalum

Colon.—There was extreme congestion with everywhere hæmorrhages into the mucous membrane. Cellular infiltration was less marked than in the small intestine (v. Fig. 2).

Liver.—Extreme changes were present. There was almost universal fatty degeneration of liver-cells. At the periphery of the lobules fatty changes were complete, and nuclear staining was often absent. Round the portal vein fat-globules were present, but degeneration was less extreme, although nuclear staining was definitely impaired.

There did not appear to be any marked change in the perilobular zones supplied by hepatic vessels.

Pancreas.—There was marked increase in the interlobular fibrous tissue, particularly that surrounding the ducts. In certain ducts, appearances suggested desquamation of lining epithelium. There was some congestion of blood-vessels, and the blood in the veins showed polymorphonuclear leucocytosis. The gland tissue appeared natural, but the capillaries were congested, and red cells—lying free amongst the gland-cells—were seen. In sections stained by Van Gieson's method early interlobular fibrosis was present.

Mesenteric glands.—No definite changes were found.

Suprarenals.—No changes were found.

Spleen.—This was engorged. There was some slight thickening of the capsule, with very marked increase in perivascular fibrous tissue and marked increase in extent of lymphoid (Malpighian) follicles.

Kidney.—Showed congestion, with some cloudy swelling.

Bacteriological investigations.—The mucous membrane was scraped off two or three different parts of the large intestine and smeared over three neutral red agar (Dr. Houston's "Rebipelagar") plates. Many red and colourless coliform colonies developed in twenty-four hours and also some streptococcus colonies. The red lactose-fermenting, coliform colonies and the streptococci were not studied further. Several of the colourless colonies on the "Rebipelagar" plates were studied in detail, and the organism proved to be a variant of the *Bacillus dysenterix* (Flexner).

Isolation of *Bacillus dysenterix* (type Flexner, modified) from the intestine post-mortem. It was a longish coliform, Gram-negative bacillus, non-motile, but exhibiting slight Brownian movement in young broth cultures.

On agar the growth was like that of the coli-dysentery group of organisms and gelatine was not liquefied. In broth, after five days at 37° C., a fair amount of indol was produced and tested for with the paradimethyl amido-benzaldehyde reagent. In milk the organism grew well; the reaction was slightly acid on the first day, neutral on the third day and markedly alkaline on the fifteenth day.

The fermentation reactions were as follows: On the first day acid and no gas in glucose, mannite, galactose, maltose, salicin and isodulcite. On the fourth day, some acid and no gas in sorbite and glycerine and slight acid in dextrin (four to seven days). No acid or gas was produced in lactose, saccharose, inulin, raffinose or adonite in seven days. The agglutination of this bacillus was tested with a *Bacillus dysenterix* agglutinating serum. At the time of use this serum had been prepared nearly two years, and its agglutinating titre was considerably lower than it had been.

It agglutinated the Flexner bacillus completely in a 250-fold dilution, partially at 1 in 500 and slightly at 1 in 2000. The bacillus isolated from this case was agglutinated, partially at 1 in 250 and slightly at 1 in 500 up to 1 in 2000.

There can be no doubt, therefore, that we are dealing here with a dysentery bacillus of the Flexner group differing from the type bacillus in only a few minor points. On referring to Morgan's paper in the 'Journal of Hygiene' for March, 1911, it will be seen that Flexner's bacillus produces no acid in sorbite, salicin, isodulcite or glycerine; whereas the organisms isolated from this case produce more acidity in all these media in two, four, or, as in the case of glycerine, in seven days. Cultures made from the

liver, spleen and mesenteric glands remain sterile. From the heart-blood *Bacillus coli* and streptococci were grown—to be regarded as a terminal or post-mortem infection.

This case is an extremely interesting one, because clinically it was regarded as one of colitis, with recurring acute attacks, without its dysenteric nature having been established.

Post-mortem: The condition of the large bowel closely resembled that of patients in asylums who have suffered from subacute or “periodic” dysentery. Outside asylums dysentery is usually stated to be rare in this country. In cases of summer diarrhœa American observers have found the dysentery bacillus, but Morgan, who made a careful study of the disease in this country, failed to find the dysentery bacillus in the stools. To show that infection with this bacillus is not so rare as is commonly supposed, we may mention that within four months of isolating the *Bacillus dysenterix* from the above case, similar organisms were isolated by one of us from two other children who came from widely separated parts of the country.

Our other cases were none of them fatal, and they will only be used to illustrate important points of likeness or features of special interest.

CASE 2.—This was a boy who was seen by one of us in consultation on several occasions. In some respects we think that this was a unique case, for an accurate daily record was made of the diet from May the 27th, 1909, to June the 12th, 1912—that is, a period of over three years. The weight was also kept from birth, and so we are able to give a graphic representation of the beginnings of infantilism in the form of a chart which we think is a very interesting one (Fig. 3). The records of this case also provide us with some concrete examples illustrating the extreme difficulties that arise in dieting such cases. This child was born in November, 1907, and was breast-fed for five months, and after this took cow's milk well until January, 1909, at the age of thirteen months, when he had “gastritis.”

In April, 1909, he had whooping-cough, and this was followed in May by diarrhœa, which was ascribed in part to dentition. The motions contained mucus, were porridgy in consistence and colour, and singularly odourless. From this attack he made a slow but steady recovery. In August, 1909, during some hot weather, a nurse gave him some unwholesome raw meat-juice, and a chronic diarrhœa developed which aroused no particular alarm until October the 2nd, when nearly two years old. Then he collapsed suddenly, and was apparently dying. The child, however, rallied from the collapse, but for the next three years there was a continual struggle carried on with the assistance of the most skilful trained nurses that could be obtained.

At birth he weighed 8½ lb., at 1 year 24½ lb., at 2 years his weight was 17 lb., at 3 years 17¼ lb., and at 4 years 25½ lb. Among the most striking symptoms were intervals of extreme distension, general anasarca with fluid in the peritoneal cavity, attacks of heart failure and diarrhœa or constipation, with the passing of pale stools and mucus.

At the present time he is, with the aid of supports, just learning to walk, and the photograph taken when he was aged four shows that he looked like making a recovery, which at the age of five and a half, seems more assured.

The one fact that stood out prominently in the management of the case was the one that has struck us and others, that progress in diet had to be infinitely slow. It may be safely stated that this boy, most skilfully nursed and seen by many medical men, had practically every resource of invalid diet tried. In addition to this his father was a man of extraordinary accuracy and pertinacity, and noted every detail which had bearing upon the success or otherwise of any experiment in this direction. Yet when the boy had been gaining steadily and was 5 years and 3 months old this was a specimen of the diet that had been found safe and effectual in the twenty-four hours: Milk, 35 oz.; virol, 5 drin.; cream, $\frac{1}{2}$ oz.; the juice of twelve grapes; water, 6 oz.; a slice of chicken, six buttered rusks, some cauliflower and orange jelly.

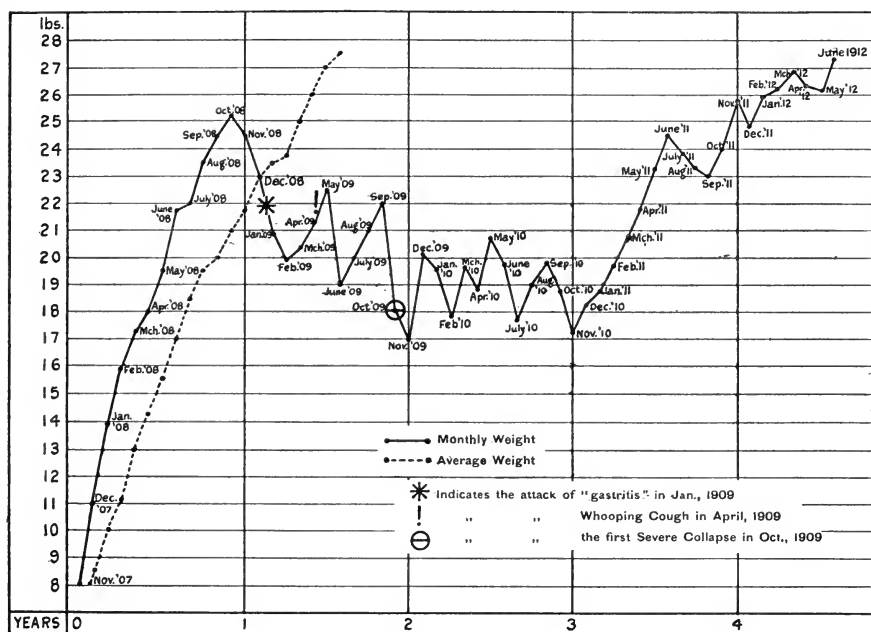


FIG. 3 (Case 2).—A chart of the weight from birth in November, 1907, to June, 1912. The horizontal line 0, 1, 2, 3, 4 represents the years. The vertical line represents the weight in pounds from 8 to 28. The dotted line represents the increase in weight of an average child. The black line is subdivided by dots representing the successive months. This chart illustrates the development of the "infantilism" coincident with the inability to absorb sufficient nourishment.

In September, 1909, before his first and almost fatal collapse and when the nature of the condition had been hardly realised, these experiments with diet are of interest. Benger's food was given for five days, during which there were twenty-three motions and three vomits, while on the other hand, small quantities of Savory and Moore's food always suited the patient, and was at one time one of the only means of giving nourishment. Cream was tried for four days and on three of them produced sickness. Chicken caused foul motions and sickness. Potato produced green motions and sickness. Eggs, scrambled or lightly boiled, made the child extremely ill with vomiting and diarrhoea. After the first collapse this diet illustrates one which was well borne

and produced a slight but steady increase in weight: 21 oz. of cow's milk and 3 oz. of barley-water, 7 oz. of Savory and Moore's food, $\frac{1}{2}$ oz. orange-juice and 2 dr. of meat-juice, with 2 dr. of brandy; the amount of fluid was about 33 oz.

The following is an example of the results of hurrying the progress of the diet. The preceding diet had, as we have stated, enabled the child to rally, and after losing 3 $\frac{1}{4}$ lb. in the attack he had gained 11 oz. back in a fortnight. The next week he remained stationary, and, the dangers of the case not being brought home, a determined attempt was made to press on recovery. Four teaspoonsful of pounded sole were followed three hours later by a paroxysm of abdominal pain with some collapse. Then Savory and Moore's food was increased in a week from 7 to 27 oz. in the twenty-four hours. As a result, to the delight of all, the child increased 1 $\frac{1}{2}$ lb. in weight, but then followed dangerous collapse with great abdominal distension, which proved almost fatal on November the 22nd, 1909. By the following January the weight had dropped to its lowest (16 lb. 6 oz.) before once more the child commenced to make any steady forward step upon an almost starvation diet.

CASE 3.—This case is a very characteristic example of the condition we are considering, which illustrates the steady tendency to improvement which occurs without any clear reason. A boy, aged 5 years, was fed upon Ridge's food for seven months and weighed 16 lb. 2 oz., and at that age attracted much attention at a baby show. Later, however, rickets developed.

When two years and ten months old he and his sister had an attack of summer diarrhœa with green motions, for which, in the fifth week, he was admitted to the hospital and remained in twelve days. The chief emphasis then was laid upon the rickets. A return of diarrhœa occurred in the following summer, and he was readmitted with the provisional diagnosis of abdominal tuberculosis. He was then passing large motions, and while in hospital, from June the 8th to July the 22nd, 1912, he lost 1 $\frac{1}{4}$ lb. in weight. He was pale and soft, the belly protuberant and tympanitic, the liver was felt below the costal arch, von Pirquet's reaction was negative. Since that date the mother, who has been most attentive to the child, has had one continual struggle with his diet. Large white offensive motions were usually passed, and the least error produced diarrhœa, when the white colour of the motions became less evident. During the last twelve months there has been a slow gain, which was interrupted once by an interesting episode.

The boy's father, naturally irritated by the slow gain on the apparently starvation diet, in a moment of mental exaltation defied his wife and gave the child pork gravy and potato. The result was a prolonged attack of diarrhœa with the usual fall in weight. This child shows the infantilism, the pallor, the desire for drinking much water, the softness of tissues and tendency to tympanites. He has been at times very ill. Now he is slowly gaining ground and the motions are becoming coloured. It may be added that bismuth has been very helpful in the minor attacks. His weight at the time he attracted attention at the baby show, when aged 7 months, was 16 lb. 2 oz., now, at the age of 5 years, it is 29 $\frac{1}{2}$ lb. The course of events in this case was: (1) Rickets, (2) acute summer diarrhœa, (3) recurrent diarrhœa, (4) the appearance of cœliac symptoms, (5) gradual convalescence with infantilism resulting from the previous illness.

CASE 4.—Male, aged 1 year 7 months, was under observation for eight weeks and was brought to hospital for an attack of diarrhœa of a fortnight's duration. When aged 10 months this patient had an attack of acute diarrhœa of the epidemic summer type, and from this he never fully recovered. He was breast-fed only during the first three months of life, and then given successively cow's milk, Nestle's milk, barley-water and Virol without success. His weight at birth was 6 $\frac{1}{2}$ lb. He was described as of marasmic appearance, expression somewhat anxious, rather ill-nourished. He was typically pot-bellied, the liver could not be palpated, but a dilated and thickened

colon was easily felt. There was no mass or any free fluid in the abdomen. The stools were characteristic, bulky, semi-solid, clay-coloured or almost white, offensive, and not infrequently possessing a marked cheese-like odour. Von Pirquet's tuberculin reaction was negative. No special attempt at dieting was made and he left hospital but little the better. His weight on leaving hospital was unchanged, 14½ lb.

CASE 5.—Male, aged 1 year 8 months. This boy was under observation from January to March, 1913, with "wasting" and "rickets." There had been diarrhoea at intervals since birth, the bowels opening three times a day; stools large, putty-coloured and offensive; at times there was mucus in stools. Frequent vomiting occurred some hours after food. Two months before admission to the hospital he had an attack of bronchitis, after which he was noticed to drag his right leg and had not been allowed to walk since that time. He had measles and pertussis when six months old, and has always been delicate. He was quite unable to take cow's milk, though formerly fed on milk and water, but since January the 15th he had tolerated Glaxo. On January the 28th he had an attack of laryngismus stridulus. When admitted to hospital on March the 3rd he was fairly well-developed, but there was definite evidence of rickets in the long bones and ribs. The abdomen was prominent, soft but not tender, and the liver could be palpated. There was impairment on percussion in the flanks and lower abdomen pointing to the presence of free fluid. Whilst in hospital he was rather constipated, only twenty-two stools being passed in twenty-one days. The stools were always pale, bulky, greasy and sour-smelling, they were never watery and contained neither mucus nor blood. His weight on leaving hospital was, as on admission, 1 st. 5 lb.

(*To be continued.*)

THE MECHANO-THERAPEUTICS OF CHRONIC INFANTILE PARALYSIS (POLIOMYELITIS ANTERIOR ACUTA).

By EDGAR F. CYRIAX, M.D.Lond.

DURING the last years a great deal of work has been done with regard to poliomyelitis anterior acuta. Special attention has been directed to its causes and pathology; the treatment has also been carefully studied, although chiefly from the point of view of electro-therapeutics and orthopædic operation. Mechano-therapeutics have, however, not received the attention which, in my opinion, is due to them. This seems partly due to the fact that instruction in these methods does not enter into the ordinary medical curriculum, neither the theory nor *modus operandi* receiving more than casual mention; in consequence the medical profession is inclined to under-estimate their possibilities. The mere fact of the treatment in question being loosely called "massage"—a term almost universally applied to it—is evidence as to what it is generally supposed to be, and the fact that nearly always it is prescribed merely as an adjuvant to electric or other treatments, but hardly ever alone, shows that it is generally regarded as having but little intrinsic therapeutic value.

Modern scientific mechano-therapeutics dates back to the days of

P. H. Ling (1776–1839), who founded the Royal Central Gymnastic Institute in Stockholm in 1813. Certain modifications of the original methods were made in the course of time by Ling's successors, notably Branting (1799–1881) and H. Kellgren (born 1837), and to the latter are due, not only many improvements of the technique, but also several new manipulations; as an instance of the former may be quoted the systematic application of "traction" in active and passive movements of joints, and as an instance of the latter his direct manual nerve stimulation by means of nerve-friction. In this paper I propose to describe the various manipulations applicable to chronic cases of infantile paralysis, with special reference to those employed by H. Kellgren, paying particular attention to the technique.

The pathology of the disease, respecting the motor troubles that have to be dealt with, is that there is a degeneration in the cells of the anterior horns of the grey matter, with consequent degeneration in the motor nerves emanating from them and in the muscles supplied by them, *i. e.* there is a more or less complete degeneration and paralysis in the lower motor neuron.

The rational treatment of such a condition should have for its object the re-establishment of the interruption in the motor channels, and the method, in brief, consists in endeavouring to force this interruption both from below upwards and from above downwards. The following measures are those employed:

I. LOCAL TREATMENT:

A. Passive stimulatory manipulations on the lower motor neuron and the muscles supplied by it.

B. Passive stimulatory manipulations at the site of the damage in the spinal cord.

C. Active stimulation of the upper neuron, *i. e.* active endeavours to move paralysed muscles.

II. GENERAL TREATMENT:

I. LOCAL TREATMENT.

A. *Passive Stimulatory Manipulations on the Lower Neuron and the Muscles supplied by it.*

(1) *Passive stimulatory manipulations on the affected muscles.*—

(i) *Pétrissage*.—I purposely refrain from adopting the term "massage"; in the first place this word has no standard meaning attached to it, some authors confining it to stroking and kneading, and others applying it indiscriminately to every form of passive and active manipulation and exercise, and secondly, because most authors

assume massage to be administered with the intervention of vaseline or other lubricant, a method which personally I never employ, and which is quite distinct from the dry form of *pétrissage* used to stimulate muscles. The following is the description of the technique: The operator's fingers and thumb are kept as far as possible extended in their interphalangeal joints, although as loose as is compatible with the proper elastic execution of the movement. The method of application depends on the situation of the muscle under treatment. Should more than one surface of the patient's muscle be accessible, the operator grasps that muscle between his fingers and thumb; the point of application of his grasp being, however, not over the actual part to be kneaded, but a little above it. Then, the skin of the patient moving in unison with them, the operator moves his fingers and thumb backwards until they lie over the part in question. If the condition laid down be not complied with, the range of the movement is diminished. The patient's skin moving constantly together with them, the operator's fingers and thumb are carried forwards in a centripetal direction, meanwhile applying pressure towards one another and against the underlying structures until the patient's skin is on the stretch, when the forwards movement should be arrested. Then, the operator's fingers and thumb, relaxing their pressure, pass back again to their original position. The direction of the movement should not be simply forwards and backwards, but more in the form of an ellipse, so that the patient's muscle is moved alternately to one side, when the fingers proceed forwards, and to the other side during the reverse process.

Should only one surface of the muscle be accessible, the operator uses only the fingers (or else only the thumb), placed over the part to be manipulated. The kneading takes place as before, with pressure exercised towards the underlying structures. The manipulation can be administered with one or both hands. In the latter case the hands are placed at a different level, and both alternately execute the same movement as did the one hand; or else the fingers of the one hand can be used to replace the thumb of the other. In the former case the second hand is used to steady the part manipulated.

When applying the *pétrissage* it is unnecessary to denude the part of clothing; indeed, unless special circumstances make it desirable, it is generally better to have this underclothing intervening, as this minimises the possibility of skin irritation. I entirely disagree with those authors who state that any form of massage applied over clothing is simply quackery.

The effects of pétrissage of muscles.—A very large amount of clinical and experimental evidence is to hand. Various authors have at different times found effects on the venous, arterial and capillary circulation, the lymphatic flow, recovery from fatigue, electrical actions, sensations of various kinds, temperature, etc. It is unnecessary to mention them here further than to say that most authors ascribe the beneficial effect to circulatory influences and the removal of fatigue products. It has, however, been demonstrated that massage can remove fatigue in muscles in which the entire circulation has been stopped; furthermore, that massage can increase the power of a muscle before it has been fatigued. The latest and, in my opinion, the most conclusive researches are those of Palmén and Rancken, who have demonstrated that practically the entire effect of *pétrissage* is due to its stimulating the vital activity of the muscle cells, and that the circulatory changes it induces play a most subordinate rôle, if any at all. Indeed, if such circulatory changes were of importance as regards healthy muscles, it is obvious that they would not be so in the atrophied muscles of poliomyelitis unless at the same time the vital activity of the lower neuron were stimulated to avail itself of such changes.

In view of these considerations, it is evident that the more superficially *pétrissage* is applied the less will it achieve the desired result. Therefore the use of vaseline and other lubricants is entirely to be condemned, as they convert a deep massage of the muscles into a superficial one that does little more than affect the skin, as the operator's fingers glide over the skin instead of his fingers and the skin moving as one over the muscles. Further, it should be noted that another objection to their use is that skin secretion is prevented by clogging up the orifices of the sebaceous and sweat-glands, a proceeding that is liable to produce unpleasant effects, as any form of massage over the skin greatly increases the insensible perspiration. A frequent consequence is that the so-called massage eruptions ensue, and the treatment has to be stopped until these have passed away.

For all these reasons it is of course obvious that mere stroking movements, *i. e.* effleurage, with the aid of such lubricants are, as regards the disease under consideration, a futile and pointless waste of time and energy. Should anyone suggest that such effleurage promotes the nutrition of the skin (certainly a desirable result), the only necessary comment is that properly applied *pétrissage* of the muscles effects the same far more thoroughly, and that in any case improved vital activity of the lower neuron is a necessary preliminary

to the skin becoming capable of availing itself of the circulatory changes (as mentioned above)—a condition that effleurage can only evoke to a very slight degree, if, indeed, at all. Attend to the spinal cord and the muscles, and the skin will take care of itself.

The question arises, for how long, during each *séance*, should *pétrissage*, in the manner described above, be applied? Bearing in mind the effect that it produces, namely stimulation of the vital activity of the cells, and there being no question of its use in order to break down adhesions or remove œdema in the disease under consideration, it is obvious that lengthy application only results in overstimulation, and thus produces the contrary of the effect desired. In practice a few minutes, say two to five, is sufficient, and only so much as this when dealing with a large muscle or group of muscles that has to be worked over bit by bit. Indeed, better results are often obtained by dividing such an application of, say, three minutes into three separate ones of one minute each with suitable intervals. It is, as a matter of fact, actually fortunate for the patients who suffer from poliomyelitis that modern massage with lubricants is applied so as *not* to affect the underlying muscles to any great extent, otherwise the daily application lasting twenty or thirty minutes (quite a common period prescribed) would prove the very opposite of beneficial.

(ii) Another kind of manipulation which differs markedly from the above-mentioned *pétrissage* is one which resembles a nerve-friction. The technique is practically the same as for nerve-friction, except that the manipulation is applied transversely across a muscle instead of a nerve. A distinct snap of the muscle should be felt by the operator—frequently also by the patient—as the fingers pass across it, and the patient experiences a not altogether unpleasant sensation of stimulation. A dull boring pain is an indication that the manipulation has been wrongly applied, and generally results from too great and too prolonged pressure, or because the manipulation has been carried out too slowly.

Such frictions can be applied in the above manner to both the fleshy portions of the muscle and its tendon. Concerning the effects on the latter, it can be shown that they sometimes produce markedly stimulatory results, *e.g.* in case of weakness of the quadriceps femoris. With the thigh horizontal and the knee flexed to a right angle, the patient can perhaps only just manage to effect a slight amount of contraction of the muscle in question, so that the foot travels through an arc of 5 degrees or less; after a few energetic frictions on the patellar tendon, the foot can often voluntarily be moved through an arc of, say, 30 degrees or more. The

mechanism by which this is brought about is no doubt the same through which is caused the contraction of the muscle when testing for the patellar reflex.

(iii) *Tapotement over muscles*.—This can be applied in various ways, of which hacking and clapping are most applicable to muscles. They may be defined as the administration in rapid succession of a series of short, sharp elastic strokes with the hand. It is in every case of the greatest importance that the fingers, wrist- and elbow-joints of the operator be kept loose during their application.

(a) *Hacking*.—The forearm is placed in the mid-position with the fingers slightly separated from one another, the first finger being almost fully extended in both metacarpo-phalangeal and inter-phalangeal joints, each succeeding one being slightly more flexed. By means of extension of the forearms with a certain amount of supination and ulnar flexion at the wrist, alternated by the reverse, the operator's hand applies a series of light blows to the part it is desired to stimulate, the dorso-ulnar surface of the fingers and the distal portion of the ulnar surface of the palm being the actual parts to come in contact with it. The movement should be as little as possible generated from the elbow-joint, but as much as possible from the joints below it. Keeping the wrist and fingers stiff, and generating the movement from the elbow-joint, renders the hacking hard, heavy, inelastic and unnecessarily painful, which is still more the case when the elbow-joint also is kept stiff. Both these defective methods are, however, advocated by more than one author.

(b) *Clappings*.—The method is the same as for hacking, except that the palmar surface of the fingers, with or without the distal part of the thumb and palm in whole or in part, comes into contact with the area to be treated. The movement is generated by alternate flexion and extension of the wrist and elbow-joint, the former being employed as much as possible, the latter as little as possible, just as in the case of hackings.

As regards the length of time of administration, a few seconds to half a minute at the most at each time is generally sufficient. Longer applications than this, as in the case of *pétrissage* described above, easily tend to over-stimulation.

The effects of these manipulations are :

(1) Direct :

(a) Stimulation of the muscle substance.

(b) Stimulation of the sensory and motor nerves in the muscle.

(c) Stimulation of the larger nerve-trunks lying in the area thus treated.

(2) Indirect : Stimulation of the sensory nerves causes stimulation of the spinal cord, with resultant stimulation of the motor nerves running from it to the muscles. (See also effects of nerve-frictions.)

(2) *Frictions on the nerves leading to and from the muscles.*—(The word “friction” in this case denotes something very different from that form of massage which unfortunately bears the same name.) I have described the technique of nerve-frictions on so many occasions (2) that it will only be necessary to give a short *résumé* of the method. Frictions may either be stationary or running; the former are administered as follows : The part of the body in which the nerve lies is placed in such a position that the muscles, fasciæ, etc., that lie superficial to the nerve are relaxed. The nerve should then be exactly located either through knowledge of topographical anatomy or by means of the sense of touch—a much greater number of nerves can be palpated than is generally supposed. The operator may then employ the tip of either the first or second finger or the thumb, or the tips of the forefinger and thumb in apposition; the exact method depends upon the site of the nerve, the intensity with which it is desired to apply the friction, etc. The operator places the digit or digits to the side of the nerve to be treated and moves it (or them) across the nerve at right angles to its long axis, a slight amount of pressure being applied at the same time. It must here be insisted upon that it is of the utmost importance that the skin of the patient and the manipulating digit should move as one over the nerve, as otherwise merely a scratch of the skin results, the nerve being left absolutely unaffected. As soon as the nerve has been traversed, the pressure is released; then, either a friction is applied in the reverse direction, thus arriving at the original position, or the digit is passed lightly back to it. The manipulation is repeated several times, each individual friction occupying about a quarter of a second. The commonest mistakes made by beginners in administering nerve-frictions are, first, that the finger applies a great amount of pressure before the friction is executed, and secondly, that the actual friction is executed by *slowly* passing the finger over the nerve. This is exactly the reverse of what should be done, as the nerve tends to be paralysed in consequence of such a degree of pressure being applied, and if too slowly applied, the manipulation fails to cause any stimulation of the nerve.

As regards running frictions, these are applied differently in the case of deep-seated and cutaneous nerves respectively. On deep-seated nerves they may be carried out in one of the two following

ways: (a) A series of stationary frictions is applied at different levels successively in the course of the nerve, proceeding either in a centrifugal or centripetal direction; (b) a series of zigzag frictions is applied, successively crossing and re-crossing the nerve either in a centrifugal or centripetal direction. In the case of cutaneous nerves, the backs of the nails of one or more fingers are placed over the area to be treated; they are then moved across it either with a simultaneous zigzag movement or else with simultaneous vibration.

Nerve-frictions are applied—

- (a) Locally to the nerves supplying the affected muscles.
- (b) On the main nerve-trunks above the affected muscles.
- (c) On the cutaneous nerves of the affected part.

Stated briefly, the effects of nerve-frictions are to produce a mechanical stimulation of the nerves to which they are applied; this stimulus does not spread merely centrifugally in the case of motor nerves and merely centripetally in the case of sensory ones, but in both directions along each of these sets of nerves in consequence of the law of double nerve-conduction. Considered somewhat more in detail, the results are:

- (a) Stimulation of the motor elements of the nerves.
- (b) Stimulation of the sensory elements of the nerves.
- (c) Stimulation of that portion of the spinal cord through which run the nerve-fibres to and from (a) and (b), with resultant excitomotor reflex of repair in the degenerated nerve-cells, nerve-fibres and muscles.
- (d) A local vaso-constriction in the part supplied by the nerves stimulated, followed very soon by a vaso-dilation in consequence of increased activity in these muscles and their nerves.

(3) Passive movements at joints: In the disease under consideration, where stimulatory measures are being aimed at, all such passive movements, whether flexion, extension, abduction, adduction, rotation, or circumduction, must be applied briskly, energetically, and (unless contra-indicated) through their fullest range. Practically the only contra-indication to be met with is in the case of disturbed antagonism between two sets of muscles, in which case care should be taken to avoid stimulating the set that are too strong by stretching them too much or by applying a jerk to them. Such stimulation would only cause a double undesirable effect, namely, a direct increase in their power as well as a reflex decrease in the strength of the already weakened antagonists, in accordance with Sherrington's law.

The stimulatory effects of the above-mentioned passive move

ments at joints are greatly heightened by the simultaneous employment of "traction," that is, when possible the operator always elongates the part to be exercised by stretching its distal free end away from its proximal fixed one, maintaining this condition throughout the movement. The effects on the muscle is to increase its power, for the greater the amount of elongation (within the physiological limit), the greater the power of the muscle to do work. There result also stimulation of the nerves of the part through their being elongated, increased absorption by the lymphatics and promotion of the circulation generally.

B. Passive Stimulatory Manipulations at the Site of the Damage in the Spinal Cord.

These are as follows :

(1) Frictions on the posterior divisions of the spinal nerves whose anterior branches are affected : the technique of nerve-frictions has been described above. The effect of these manipulations is to stimulate the anterior nerves ; it has long ago been shown that excitation of a posterior root causes currents of action in the anterior ; in normal subjects, frictions on any of the lower posterior dorsal nerves generally causes contraction in the corresponding segments of the anterior abdominal muscles.

(2) Frictions on the anterior divisions of the affected spinal nerves : These have practically been described when considering nerve frictions on the main nerve-trunks above the affected muscles.

(3) Hacking over the affected portion of the spinal cord : The effect of this is to stimulate the underlying portion of the spinal cord as well as its nerves ; the former (3) appears to be much more susceptible to mechanical stimuli than is generally supposed.

c. Active Stimulation of the Upper Neuron, i.e. Active Endeavours to Move Paralysed Muscles.

This is effected by judicious selection from the large number of gymnastic movements that exist. A few general directions may here be given. The position of the patient's limb, and the fixation used, should be such that groups of muscles or even individual muscles are isolated, and can thus be exercised singly, so that the entire attention of the patient can be concentrated upon them or it. Special consideration should be given to such movements enabling

the patient to realise that active contractions are becoming possible in muscles until then considered by him to be totally paralysed, as the psychic effect is of great value, especially in children. (A few details will be discussed when considering the different methods of testing for active contraction.) As in the case of passive movements, the "traction" should be applied throughout the performance of active movements. I wish particularly to emphasise this point, as the use of the traction through its elongating the muscles and its general stimulatory effects greatly increases the power of muscles to do work, and makes it possible to obtain marked evidence of muscular contraction when the same movement without the use of traction would fail to elicit the same.

Every movement should be performed with the attention of the patient fully concentrated upon it, and the patient should endeavour to use all available energy in order to try and perform the movement. This is because—

(a) The greater the amount of energy sent down the crossed pyramidal tract, the greater the tendency to break through the block in the damaged nerves.

(b) The greater the efforts of the motor areas, the more readily vaso-dilatation ensues in the muscles supplied by them, as this depends partly upon a reflex through the cerebral motor areas (4).

In the disease under consideration it is of the greatest value to determine whether a given muscle is capable of voluntary contraction or not; as an example may be taken the anterior tibial muscles. The usual way recommended of testing these muscles is to place the patient on his back and then request him to flex the foot. If no movement results the diagnosis of complete motor paralysis is to be made. This test, however, consists merely in trying the power of concentric contraction against the pull of gravity, and is therefore not at all conclusive. And in any case the fact that no such movement occurs does not necessarily imply that there is actually no power of static or excentric contraction; neither, again, does the absence of either of these latter necessarily mean that the muscle is entirely incapable of voluntary activity. Further tests may be applied as follows:

(1) For concentric contraction:

(a) Extend the ankle as far as possible, applying traction, and ask the patient to flex it. The traction should be maintained throughout the patient's efforts, as it elongates the muscles to a greater degree than is possible actively. Not unfrequently it is found that the patient can contract his foot back again to the

position it would occupy in full extension without the application of traction.

(b) Slowly flex the ankle while the patient endeavours to aid in the execution of the movement; compare the result with passive flexion without such assistance.

(2) For static contraction: Slightly flex the ankle and ask the patient to keep it in that position while the operator's grasp is slowly relaxed. If in doubt as to the result, ask the patient to stop his efforts suddenly and watch for any movement indicating relaxation.

(3) Excentric contraction: Passively flex the foot and extend it alternately several times in order to obtain the exact feel of the amount of muscle tonus. Then, having flexed the ankle once more, slowly extend it, *i. e.* allow it passively to extend itself, asking the patient meanwhile to try and prevent the movement taking place. Compare this with the former.

Should none of the methods described succeed in eliciting any sign of contraction, the following additional methods may be adopted before applying the above tests:

(a) Eliminate the action of gravity. In the case specified this would be obtained by placing the patient on his side.

(b) Reduce the tension in the calf muscles either by placing the patient as in (a), and then flexing the knee to a right angle or more, or else by grasping the calf muscles in their upper part and then pressing the fleshy mass downwards towards the heel.

(c) Apply stimulatory measures to the muscles, such as frictions on its nerves, *pétrissage*, hacking, etc., or energetic foot flexion and extension, rolling, etc.

If, finally, no sign of any voluntary muscular contraction can be elicited, it is still possible that it may exist in the form of what I may call "invisible contraction," the sign of which is that a feeling of fatigue or stiffness in the anterior tibial muscles may ensue, the former very soon after the cessation of the efforts at movement, the latter perhaps not for some hours. This is a sign that active muscle contraction is not absolutely gone, and that with correct treatment it will not take long to improve it so much that actual visible contraction will supervene.

It will not be out of place here to say a few words on the treatment of contractures and deformities due to disturbances in muscular equilibrium. The literature dealing with the treatment of these conditions shows that many authors recommend massage and stretching of the contracted (*i. e.* more powerful) muscles. Now

this is the reverse of what is the correct treatment. The weakened muscles, not the stronger ones, are the ones that are to be exercised, and passive elongation of the contracted (more powerful) muscles should only be attempted simultaneously with, or immediately followed by, energetic voluntary contraction of the weakened muscle. Dr. A. Kellgren-Cyriax and I have recently emphasised these points in an article on torticollis and its treatment (5), to which the reader is referred.

The treatment which has thus been outlined should be commenced as soon after the acute stage as possible. After the fever and the constitutional disturbance have passed off there is no reason for delaying to begin it, provided that due care is exercised. Nature herself gives the clue to the correctness of this view. In any case of poliomyelitis, where both arms or both legs are affected, one leg or one arm practically always begins to recover first, and is the one which is employed by the patient to the exclusion of the other, generally, indeed, having thus to do double work. Almost always this first limb to recover continues to improve rapidly, and permanently remains the stronger of the two. Now, were it harmful to exercise that limb, it would very soon become the weaker of the two. This, however, does not happen, and this in spite of the fact that the movements it is put through are *not* selected on scientific principles, but merely take place according to the wish or fancy of the patient.

II. GENERAL TREATMENT.

By this is meant abdominal *pétrissage*, frictions on all the posterior spinal nerves, breathing exercises, etc., some or all of which, if necessary, should be added to the local treatment.

A question often asked is the following: Do not mechano-therapeutics prove more efficacious when combined with the use of electrical treatment or the administration of strychnine or other nerve stimulatory drugs? I can only answer in the direct negative, and the result of my experience is as follows: Cases that have improved under the latter methods almost invariably improve far more quickly when mechano-therapeutics are used, not as an addition, but as a substitute. Cases that have remained entirely refractory to electrical and drug treatment usually undergo amelioration with mechano-therapeutics, generally with a difficulty more directly proportionate to the length of the previous treatment than to the time the disease has lasted. By far the most favourable cases are those

in which no previous treatment has been undergone, and this holds good even with those of comparatively long standing. I have also noticed that patients who were compelled through various circumstances to stop mechano-therapeutics on the lines laid down above, and who have resorted to electrical treatment, have improved at a far slower rate, indeed in some cases have not improved at all.

In conclusion, I cannot but state my opinion that were the above-described methods of mechano-therapeutics adopted early in cases of infantile paralysis, and to the exclusion of other methods, many more cases would make a good recovery, and the greater number of them would certainly make a perfect one.

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CASE OF SUPPRESSION OF URINE IN A BOY AFTER OPERATION FOR ACUTE APPENDICITIS, CURED BY DOUBLE NEPHROTOMY.*

By ARTHUR EVANS, M.S., F.R.C.S.,
Surgeon in Charge of Out-patients, Westminster Hospital.

A BOY, aged 11 years, was admitted into Westminster Hospital at 10 p.m., on August the 8th, 1913; he was operated on the same night for acute appendicitis. The tip of the appendix was acutely inflamed and contained pus, which, as the appendix was being delivered through the wound, burst through the appendix wall and was caught upon a gauze pad; the pus did not foul the peritoneal cavity. There was a little free fluid in the peritoneal cavity; a rubber drainage-tube was inserted in the wound and reached to the site of the appendix; the rest of the wound was sewn up. As soon as the patient returned to the ward saline solution was administered *per rectum*.

* This case was shown on December the 12th, 1913, at the Clinical Section of the Royal Society of Medicine.

August the 9th: The boy was sick twice. During the twenty-four hours 8 pints of saline solution were given.

August the 10th: During this day 10 pints of saline solution were given *per rectum*. No fresh abdominal signs manifested themselves; the drainage-tube was removed and a gauze plug inserted. The patient had by this time received 2 gr. of calomel in $\frac{1}{2}$ -gr. doses, and the bowels were moved twice.

August the 11th: Patient quite comfortable; the bowels were moved twice; the temperature reached 100° F. in the middle of the day, the pulse was 86, and the respiration 34; in fact the condition was perfectly satisfactory.

August the 12th: At 2 a.m. the patient complained of pain in the left loin, and vomited three times. He was given 3 minims of oil of cajuput at 2 a.m. and 1 minim of tincture of iodine at 4 a.m. The pain got easier later in the morning. The feeds given consisted of lemonade and milk with barley-water; the boy was sick after each feed. At 11 a.m. he passed about 3 dr. of urine deeply stained with blood (the deposit obtained by centrifugalising showed blood and bacteria, both bacilli and streptococci; there were no casts).

August the 13th: The patient still has some pain, and it is now in both loins. His colour is not good and the pulse is weak. No urine has been passed since 11 a.m. yesterday. To-day about 3 dr. were voided, looking like undiluted blood. This on being centrifugalised showed blood, pus, black pigment-granules, oxalates, and a few large cocci; there were no casts. Hot fomentations to the loins have been continuous since yesterday. At 5 p.m. a hot pack was given, as vomiting was persistent. The boy seemed more comfortable until 7.30 p.m., when he had a convulsion—the face twitching and the eyes fixed; 2 pints of citric acid solution were given *per rectum*. At 8 p.m. he was unconscious and the pulse feeble; 3 pints of saline solution were given intravenously, and 2 pints *per rectum*. A hot-air bath was given. The skin did not get moist. 8.45 p.m.: The pulse became very feeble—was only just perceptible. At 9.20 p.m. the patient was taken to the operating theatre, and I rapidly exposed both kidneys and freely laid them open, cutting through the substance of the kidney and exploring the pelvis in each case; no stone could be felt in either. Each kidney seemed to me much larger than normal, particularly the left, and each felt *tenser* than normal. From the left kidney I excised a small piece for microscopical purposes. Both kidneys bled profusely (as usual), and both were plugged with gauze packing. As far as the gush of blood from the cut kidney would allow one to express an opinion,

I did not find any urine in either pelvis. The patient was taken back to the ward, and at 9.45 p.m. 10 minims of brandy were given hypodermically and 2 pints of saline solution administered subcutaneously.

August the 14th: At 12.15 a.m. the voluminous dressings had become sodden and needed packing; it was evident that urine as well as blood had soaked these first dressings. So profusely did fluid discharge from the kidney incisions that fresh packings were necessary at 3 a.m., 5.30 a.m., 6.30 a.m., 8 a.m., 9 a.m., 10.45 a.m., 1.30 p.m., 5.30 p.m., 7.45 p.m., and 11.30 p.m. The bladder was washed out at 11 a.m. The pulse was much stronger, and the patient was quite comfortable; he did not vomit, and there was no further convulsion.

August the 15th: The boy is much better, and the pulse much stronger; he has slept fairly well, he has taken his food well, and has not vomited. The dressings were frequently changed.

August the 16th: At 3 a.m. the temperature rose to 102.6° F. The patient passed $2\frac{1}{2}$ oz. of urine *per urethram*; this was darkly coloured with blood. The bladder was washed out. At 12.30 p.m. $1\frac{1}{2}$ oz. of urine were passed; at 3 p.m. the temperature was 103.6° F.

August the 17th: The patient had a very good night; his temperature has fallen to 100° F. During the twenty-four hours he has passed 29 oz. of urine.

August the 19th: Under an anæsthetic I removed the gauze plugs from the kidney wounds and substituted others.

The remainder of the history is uneventful. The patient made an uninterrupted recovery.

Dr. R. G. Hebb, who has examined the portion of kidney removed at the time of the operation, reports: "Malpighian bodies large, and the capillaries engorged; in some there is a coagulum. The lumen of tubes is large, the lining cells are small and finely granular, the nuclei are normal. Some tubules contain a finely granular detritus, and others a homogeneous substance (possibly casts). The condition is of recent origin. There is no evidence of septic inflammation or of any growth. The kidney is in a condition of 'cloudy swelling.'"

I have only to add to these notes that the urine is now normal, hence we may assume that the urine was normal before the attack of appendicitis, and so it is clear that in this case we have been dealing with an almost fatal attack of suppression of urine in a patient whose kidneys were previously normal.

A RETROSPECT OF OTOTOLOGY, 1913.

By MACLEOD YEARSLEY, F.R.C.S.,
Senior Surgeon to the Royal Ear Hospital, etc.

NOTHING of exceptional note has stirred the otological world during 1913, even though an International Congress has been held in London.

In *Anatomy* there have been two papers, one on the "Topography of the Tympanic Cavity," by Cavanaugh (A. of O., xxii, 699), and one on "Radiographic Findings illustrating the Anatomical Development of the Mastoid," by Stewart (A. of O., xxii, 677).

Three papers of use in *Clinical Investigation* are Haskin's "Ocular Manifestations in Nasal and Aural Diseases which probably indicate Involvements of the Sympathetic Nervous System" (A. of O., xxii, 384), Walker Wood's "Direct Examination of the Eustachian Tube and Naso-pharynx" (J. of L., xxviii, 568), and Macleod Yearsley's "On Errors of Diagnosis in Ear Disease" (C. J., xlii, 577).

In the subject of *Middle-ear Suppuration*, two papers—one on the importance of its early recognition, by Hammond (B. M. S. J., clxvii, 725), and one on the neglect and proper treatment of acute suppuration, by Alexander (A. of O., xxii, 159)—strike a warning note to general practitioners; and Prendergast and Schultz (C. M. J., xii, 146) describe acute suppurative otitis media due to the *Bacillus typhosus*.

It is not always easy to winnow the plethora of papers which appear annually on *Mastoid Surgery*, but of those in 1913 the best are probably: Borden (B. M. S. J., clxviii, 221), on "Diseases of the Middle Ear and Mastoid Cells, based upon a Study of 454 Autopsies and 2232 Cases of Diphtheria, Scarlet Fever and Measles"; Verel (J. of L., xxviii, 234), on the "Significance of Fever in Cases of Mastoiditis complicating Acute and Chronic Suppurative Otitis Media"; F. Law (A. of O., xxii, 635), Dixon (A. of O., xxii, 369), and Sohler Bryant (A. of O., xxii, 482), on "Radiographical and Other Indications for the Mastoid Operation"; Ingersoll (A. of O., xxii, 629), on the "Operative Findings and Results of Mastoiditis"; Lithgow (J. of L., xxviii, 589), on the "Importance of a Painless 'First Dressing' in the Radical Mastoid Operation"; Milligan's address (B. M. J., 1913, ii, 729), opening a discussion on the technique and after-treatment of such operations; and Hammond's paper (A. of O., xxii, 652) on the same subject. The use of scarlet-red as a dressing receives attention from Ross (J. of L., xxviii, 187), and

Fraser discusses erysipelas following the radical operation (J. of L., xxviii, 472).

Of the *Intra-cranial Complications of Middle-ear Suppuration*, the most important paper is that by Milligan (J. of L., xxviii, 242), on the "Treatment of Meningitis of Otitic Origin." Stockdale (J. of L., xxviii, 1) reports the case of a boy, aged 12 years, in whom serous otitic meningitis, with septic thrombosis of the lateral sinus and internal jugular vein, was successfully treated by operation. A case of brain abscess of aural origin in a boy, aged 16 years, is recorded by Murphy (J. of L., xxviii, 587).

As regards *Non-suppurative Middle-ear Disease*, the greatest work has been done from the point of view of *prevention*. Under the auspices of the National Bureau for Promoting the General Welfare of the Deaf, Kerr Love has published his four fine lectures on this subject. Two strong resolutions on the necessity of including specialists upon the medical staffs of fever hospitals have been passed by the International Congress and by the London branch of the Association of Medical Officers of Health, the latter after a paper by Macleod Yearsley (P. H., xxvi, 369) on the "Prevention of Acquired Deafness." The question is attracting the attention of leading otologists in America, as shown by papers by Reik (J. H. H. B., xxiv, 289), Hudson-Makuen (N. Y. M. J., xcvi, 305), Sheppegrell (N. O. M. S. J., lxi, 291), Hays (N. Y. M. R., 1913, i, 646), and Sohler Bryant (J. A. M. A., lx, 878).

Other papers of value to pædiatric otologists are: "Ear, Nose and Throat Work in General Practice," by Costobadie (P., 1913, i, 579); "Primary Tuberculosis of the Middle Ear," by Long (A. of O., xxii, 499); and "Hysterical Deafness in Children," by Arnold-Jones (M. C., xxvi, 31).

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Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, January the 23rd, 1913.

The President, DR. LEONARD GUTHRIE, in the Chair.

A Case of Kala-azar.—Dr. T. R. WHIPHAM showed a boy, aged 5 years, whose father had contracted kala-azar in Calcutta a year ago and died recently from that disease. In March, 1913, when in Calcutta, the boy was taken ill with fever and loss of appetite. The motions at that time were white, but otherwise normal. The abdomen was enlarged when he arrived in England in June, since when he had lost weight and the size of the abdomen had increased. The child was wasted, especially in the limbs and chest; the cervical, axillary, and inguinal glands were enlarged. The abdomen measured $24\frac{1}{2}$ in. in circumference; the liver extended 3 in. below the costal margin; the spleen was enormous, extending to the middle line and filling the left iliac fossa. Blood-count: reds, 3,220,000 per c.mm.; whites, 2200; polymorphonuclears, 46 per cent.; lymphocytes, 38 per cent.; large mononuclears, 12 per cent.; transitionals, 4 per cent.; hæmoglobin, 66 per cent. The coagulation-time was diminished, being twelve minutes. Leishman-Donovan bodies were present in blood obtained by puncture of the liver. The urine was normal, and the motions were now of a proper colour.

Athetoid Movements in a Girl, aged $4\frac{1}{2}$ years.—Dr. WHIPHAM.—The movements, which were present in either hand, consisted of alternate pronation and supination, which became more marked when objects were grasped. She was the first child of her parents, and was born after a difficult labour. The condition was probably due to injury at the time of birth.

Malaria in a Girl, aged $3\frac{1}{4}$ years.—Dr. F. LANGMEAD.—The disease, which commenced in September, 1913, was typical and accompanied by rigors. The mother had malaria while the child was being breast-fed. The spleen extended downwards for four fingers' breadth below the costal margin, and the liver was also slightly enlarged. Examination of the blood showed benign tertiary parasites in fair numbers, large intra-corpuscular forms being seen. Under treatment with quinine the spleen had diminished and the patient had improved.

Abnormal Cysts on the Shoulders in a Baby 6 weeks old.—Dr. ERIC PRITCHARD.—The two cystic swellings were noticed immediately after birth. The presentation was said to have been that of a shoulder (left). The swellings appeared to be of the nature of abnormal and persistent capita succedanea.

A Case of (?) Polio-encephalitis.—Dr. J. W. CARR.—A boy, aged 7 years, had an attack of diarrhœa with severe headache and pains in the

limbs in October, 1913. He became unable to stand or speak, and also appeared to be blind. On admission in December he could not stand alone, and could see only imperfectly, and there was a considerable degree of mental deficiency. The optic discs showed evidence of a subsiding neuritis. After five weeks he began to improve as regards mental condition, sight and movement, though he still had an ataxic gait. Wassermann's reaction negative.

Deficiency of Endocrine Glandular Secretion.—Dr. F. G. CROOKSHANK showed a boy, aged 32 months, who did not speak and was apathetic and flaccid. Some of the features were suggestive of Mongolism. The upper part of the trunk and the arms were relatively less developed than the belly, which was protuberant, and the legs were large and shapeless. The external genitals were poorly developed. It was thought that the child had, in addition to some degree of Mongolism, some pituitary deficiency.

Lymphatic Leukæmia under Treatment by Benzole.—Dr. H. D. ROLLESTON and Mr. E. J. BOYD showed a boy, aged $6\frac{1}{2}$ years, who had developed enlargement of the cervical glands after measles and pneumonia. Subsequently the axillary, inguinal, and submaxillary glands also enlarged and the spleen was palpable. In December the leucocytes were 60,000; large lymphocytes, 54 per cent.; small, 16.5 per cent.; polymorphonuclears, 25 per cent. He was treated with benzole, at first mij , and later mijj , *t.d.s.* On January the 13th the leucocytes were 16,000; large lymphocytes, 41.5 per cent.; small, 46 per cent.; polymorphonuclears, 10 per cent.

Dental Cyst following Fracture of an Incisor Tooth.—Mr. PHILIP TURNER showed a boy, aged 12 years, whose right central incisor had been fractured as the result of a fall two years ago. Swelling of the jaw noticed three months ago. There was now bulging forward of the facial aspect of the superior maxilla, depression of the palate on the right side, and widening of the alveolar process. A radiogram showed that the pulp cavity of the fractured tooth was exposed, and that the open apex led directly to the cyst. The right temporary canine had not been shed, and the permanent canine was displaced.

Deformity of the Spine of (?) Congenital Origin.—Mr. L. E. C. NORBURY showed a girl, aged $5\frac{1}{2}$ years, with a prominence of the last dorsal and the first lumbar spinous processes. Slight mid-dorsal lateral curvature with convexity to the left. No pain or rigidity. X-ray examination showed a wedge-shaped condition of the first and second lumbar vertebrae. Von Pirquet slightly positive.

The following specimens were shown :

Double Hydro-Ureter (Congenital).—Dr. ERIC PRITCHARD.—The infant, aged 7 months, was admitted for diarrhoea and vomiting. The bladder was not distended, but two cystic swellings could be felt internal to the anterior superior iliac spines. The obstruction appeared to have been due to valve-like pressure of the dilated ureters, the primary dilatation being probably due to congenital atresia of the ureteral orifices. The renal pelves were greatly enlarged.

An Unusual Case of Jaundice.—Dr. J. PORTER PARKINSON showed specimens from a case which he considered to have been acute yellow

atrophy of prolonged duration. The illness commenced with a rigor. Three weeks later jaundice appeared. The liver was then enlarged, but subsequently diminished until death. No leucin or tyrosin were detected in the urine.

Two Cases of Transitory Diabetes Insipidus.—Dr. LEONARD GUTHRIE and Dr. G. A. SUTHERLAND read a short paper on this subject. The first case was a boy, aged $2\frac{1}{2}$ years, in whom the disease lasted about six weeks. He took twelve pints of water a day, and the urine, which contained no albumin or sugar, was of specific gravity 1004. There was some diarrhœa, and the motions were of a peculiar bluish-grey colour. In the second case, a boy, aged 2 years, the duration was about five weeks. The main symptoms were thirst, drowsiness, and polyuria. There was diarrhœa, and the motions were loose, putty-coloured, and offensive. The liver and spleen were enlarged. In each case, as the thirst, drowsiness, and polyuria passed off, the appetite became voracious for a week or two. A possible explanation was that the intestinal derangement set up toxæmia, which, acting on the kidneys, prevented the output of waste products. Another explanation was that the symptoms were due to toxæmic affection of the vaso-motor centres and sympathetic system, or perhaps of the pituitary body.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

December the 3rd, 1913.

Isolation and Quarantine Periods in the more common Infectious Diseases.—Dr. C. B. KER introduced a discussion on this subject. He agreed with Arnold that *scarlet fever* was moderately infectious for the first two weeks, but that most cases ceased to be infectious some time during the second fortnight, so that at the end of the fourth week only a small percentage remained so. He suggested that the accepted minimum of isolation should be altered from six weeks to five. Like Goodall, he held that six days was sufficient quarantine for contacts.

Diphtheria.—A patient should be isolated until the necessary negative cultures had been obtained. In children, at any rate, cultures should be taken from every contact and the carriers isolated.

Measles.—Ker's usual period of isolation was a fortnight from admission, *i. e.* from the period of eruption. The quarantine period which he employed in hospital was fifteen days. Only once in seventeen years had this proved insufficient, a case occurring on the seventeenth day from the last exposure.

Rubella.—His hospital period of detention was ten days, but in outbreaks in other wards he held seven days ample. Owing to the length of the incubation period, two thirds of it should be spent at school. Thus, contacts should attend school for eight or nine days after exposure, and then be excluded until twenty-one days had passed.

Whooping-cough.—He held that rigid isolation was probably unnecessary after the paroxysmal stage had lasted a week or ten days. Under favourable circumstances and in healthy children, isolation until the whooping ceased was quite unnecessary.

Chickenpox.—He held that the patient was infectious until the last crust had separated. As regards quarantine, he allowed contacts to mix with other children up to the eleventh day and then isolated them till the twenty-second.

Mumps.—He had never seen harm result from allowing patients out of isolation a full week after the swelling had subsided. Exclusion of contacts between the thirteenth and twenty-sixth days was a safe rule for schools.

Philadelphia Pediatric Society.

January the 13th, 1914, THEODORE LE BOUTILLIER, M.D., President.

Tuberculosis Class.—Dr. MYER SOLIS COHEN described his class of twenty-four children at the Philadelphia Jewish Sanatorium for Consumptives at Eagleville, Pa. He quizzes the children as well as instructs them, and has the little patients give talks on how to get well and keep well and how to avoid infecting others. This makes the class more interesting, and renders the knowledge gained more accurate, clear and available. Emphasis is laid upon the hygienic life that must be followed after the patient returns home in order that the recovery may be permanent. The children are urged to preach to their families and friends the gospel of proper living. Instruction gained in this class will tend to prevent or diminish the usual relapses due to return to an unfavourable home environment and will render more lasting the benefit obtained at a sanatorium. In answer to a question by Dr. A. N. Davisson, Dr. Cohen said that the children must know why they use separate paper handkerchiefs, sputum cups, etc., so that they may realise their danger to others; therefore this education is of great value.

Nervous Disorders of Childhood.—Dr. T. H. WEISENBURG, by invitation, showed cinematograph pictures of the following cases: Jacksonian convulsions, three cases, one limited to arm and face, one to right side of face only, and one to face only; a whole series of cases of so-called idiopathic epilepsy, in which most of the fits were tonic and not clonic; spasmodic torticollis; many cases of idiocy and imbecility, showing cases of microcephalus, hydrocephalus, rocking movements and other mannerisms so common in these defectives; hemiplegia; a series of cases of infantile diplegia with athetoid movements; a series of cases of paralysis agitans; tabes dorsalis, also showing Fraenkel movements; a number of cases of cerebellar tumour with different cerebellar symptoms, nystagmus, etc. Dr. Weisenburg said that Little's disease originally included only infants born prematurely, at seven months. He had never found one of these infants normal so far as the nervous system was concerned, even when seen late in life. He referred to a medical student who came to him with the statement that he was a seven-months baby, but was normal; in this man "*petit mal*" existed without his knowing it. Pathologically there is always some lack of development in the nerve-tracts, because the infant was not *in utero* long enough to complete development. He referred to a baby less than a week old, which had typical Jacksonian epileptic attacks, in which recovery

followed the passage of a large mucous intestinal cast. This was the only case of "reflex convulsions" of distinct and complete epileptic type in which epilepsy had not followed that he had ever observed. He believed that infants in whom complete epileptic convulsions occur, from so-called reflex causes, have idiopathic epilepsy and will have more attacks later in life.

Société de Pédiatrie, Paris.

December the 9th, 1913. (Bulletin No. 10.)

Congenital Stenosis of the Pulmonary Artery.—MM. VARIOT and MONOD showed a girl, aged 18 years, who had no cyanosis, but marked dwarfism, her height being only 1.40 m., *i. e.* that of a girl between twelve and thirteen years of age. There was a rasping, systolic bruit over the pulmonary area.

Congenital Absence of the Right Mammary Gland.—MM. MÉRY and PASTURIER reported a case in a girl, aged 13 years, born at term. The nipple was present and normally developed, and there was absence of the lower part of the right pectoralis major.

Treatment by Typhoid Vaccine.—M. MÉRY reported the case of a child, aged 5 years, suffering from a severe attack of typhoid fever, with temperature of 41° C. treated by Prof. Vincent's typhoid vaccine, which was injected on the tenth, twelfth and thirteenth days. After a further injection on the fifteenth day, cardiac collapse occurred, but eventually the child made a good recovery.

Instantaneous Radiographs of Tracheo-bronchial Adenopathy.—M. WEILL.

Severe General Erysipelas in an Infant, aged 11 months.—MM. GUINON and IZARD. VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Azotæmia in infants (*Riv. di Clin. Pediat.*, 1913, XI, p. 361).—G. Rocchi-Burlamacchi prefers this term to that of uræmia, because the latter is invariably associated with nephritis. The investigation for nitrogen in the blood has become more practicable owing to lumbar puncture, whereas previously it was necessary to bleed to 10 or 15 grm.—a dangerous proceeding in children in unsatisfactory general condition. Moog's method is used to estimate the urea in the cerebro-spinal fluid. To 10 c.c. an equal quantity of a 20 per cent. solution of trichloroacetic acid is added; the

mixture is then continually stirred and filtered. Ten c.c. of the filtrate is placed in a ureometer (Desgrez's modification of Yvon's), and 3-4 c.c. of liq. sodæ with two volumes of water is added to alkaline. The amount is then read off after decomposition by hypobromite of soda. A quantity, less than 0.50 per litre, is considered normal; when it is above this it constitutes azotæmia, and the quantity may reach 4 gr., and in rare and always fatal cases 5-6 gr. per 1000. In prognosis, persistence must be taken equally into consideration with the actual quantity. Azotæmia is most frequently met with in acute diseases—broncho-pneumonia and gastro-enteritis—less often in subacute forms. In Parrot's atrepsia it is persistent. The symptoms are cerebral, with sclerema, Kernig's sign and ocular disturbances. Renal lesions are not necessarily found. Azotæmia may co-exist with chloride retention, and there seems to be some pathological link between them. Nobécourt asserts that the high percentage of urea met with in the cerebro-spinal fluid in gastro-enteritis and sclerema depends, not only on renal insufficiency, but on a lesion of the liver. The author, however, agrees with Sevestre and Bidet in considering that it is unnecessary to explain retention of urea by insufficiency of urinary depuration, and that this may exist independently of renal lesions or changes in the liver. As there is a relation between toxic infective lesions of the liver and those of the peripheral blood-vessels, and probably also with diuresis, benefit might result from promoting the function of the liver by acting on its circulation by means of adrenalin.

VINCENT DICKINSON.

Urinary lithiasis in infancy (*Am. Journ. Dis. Child.*, 1913, vi, p. 245).—A. N. Collins reports the case of a male infant, aged 16 months, who had not micturated for twenty-four hours, and was found to have a stone impacted in the extreme end of the urethra. The calculus weighed $\frac{3}{4}$ gr., and was composed of earthy phosphates. During the following three months several smaller stones were passed, and after a further period of three months a skiagram showed the presence of two stones in the right kidney, one in the bladder, and a shadow about the crest of the right ilium—probably a stone in the ureter. Operation was refused, and nine months later skiagrams showed the calculi as before, with some destruction of the kidney substance. Shadows were also seen in the region of the left kidney. The infant continued to pass small calculi at intervals, and about a year later was operated upon for stone in the bladder. At the age of $4\frac{1}{2}$ years the child was in fair health, though the renal calculi had not been removed. After reviewing the subject the writer states that in the past urinary lithiasis, especially renal, has been accompanied by a high mortality. Of the cases of renal calculus in children, 5 years of age or under, more than 90 per cent. were 2 years old or under, and practically all of these were post-mortem cases. There is a paucity of reported cases of renal stone in infants discovered and treated surgically during life. Calculi discovered in older children or in adult life frequently originate in infancy or childhood, and the finding of sand or gravel in an infant's urine should lead to a radiographic examination of the urinary tract. Diseases of the respiratory system are frequently associated with calculus or hydronephrosis, and infectious diseases are associated in 65 per cent. of the cases. Bilateral or multiple calculi in the urinary tract afford an unfavourable prognosis, for which reason it is important to diagnose and treat cases early before the kidney becomes disorganised or infection complicates the case. When multiple involvement exists operation in successive stages may be done, but great

responsibility is attached to nephrectomy in the infant on account of the difficulty in ascertaining the functional capacity of the opposite kidney.

T. R. WHIPHAM.

Vesical calculus and pyelo-nephritis in a boy, aged 4½ years (*Rev. m'éd. de l'Est*, 1913, XLV, p. 371).—**Haushalter** and **Fairise**.—The child, who presented evidence of heredo-syphilis, was admitted to hospital for loss of appetite and abdominal pain. For the last three weeks his urine had been escaping drop by drop. Forty-eight hours before admission he had had violent headache, and a purpuric eruption had appeared on the upper part of the trunk and in the groins. The urine contained blood and albumen. Death, preceded by diarrhœa and frequent hæmorrhages from the lips, occurred three weeks after admission. Necropsy: Tuberculous tracheo-bronchial adenopathy, suppurative pyelo-nephritis, and cystitis due to an ovoid phosphatic calculus the size of a large walnut.

J. D. ROLLESTON.

Diagnosis and treatment of pyelitis in infancy (*Amer. Journ. Dis. Child.*, 1913, VI, p. 117).—**R. G. Freeman**, in reporting three interesting cases, lays stress upon instances of this condition in which the temperature is not raised, in contra-distinction to the more ordinary type with a high remitting fever. As regards treatment, he holds that while many cases may be cured by the neutralisation of the urine by alkalies and others by small doses of hexamethylenamin, the most efficient line of treatment in difficult cases is by the use of large doses of this drug, aided by vaccine therapy. For this purpose he has used hexamethylenamin in doses of 25 gr. daily for a child of six months, and from 35 to 45 gr. daily for a child of one year, with nothing but good effects. The initial doses of the drug should be small, but they should be rapidly increased.

REGINALD MILLER.

The pathology and treatment of paroxysmal hæmoglobinuria (*Jahrb. f. Kinderheilk.*, 1913, LXXVIII, p. 723).—**A. Reiss** found that during the attack in patients suffering from this disease autohæmolysis took place; this was not always corroborated *in vitro*, and if this were the case the addition of fresh complement produced lowered resistance of the erythrocytes, especially during the attack. Cholesterin had an anti-hæmolytic action and could hinder the attack. In two of his cases antiluetic treatment produced good results, which were still maintained six months afterwards.

F. R. B. ATKINSON.

A case of pentosuria in early childhood (*Monatsschr. f. Kinderheilk.*, 1913, XII, p. 177).—**H. Aron** describes such a case in a child, aged 5 years, the earliest case known. The disease is not a serious one, and the author finds the distinction from other forms of sugar can be made by the formation of hydrazone with diphenylmethan-dimethyl-dihydrazin.

F. R. B. ATKINSON.

Bilateral hydroureter; chronic pyocyaneus infection (*Arch. of Ped.*, 1913, xxx, p. 814).—**H. Heiman**.—A boy, aged 5 years, was admitted to hospital with the following history: Four months ago he had been taken ill with fever, headache and vomiting. A few days later blood appeared in the urine and stools, and pain and tenderness developed in the right lumbar region soon after. On admission the urine contained much pus, and

B. pyocyaneus was found in the urine and stools. Blood-cultures were negative. Temporary improvement followed the use of autogenous *pyocyaneus* vaccines, but the child was admitted again the following year with much pyrexia. The bladder then showed diffuse cystitis and enlargement of both ureteral orifices, especially the left. On X-ray examination there was considerable dilatation of the left ureter and left renal pelvis. The cause of the ureteral dilatation was obscure. There was no history of poliomyelitis or other evidence of nerve-lesions, nor any signs of obstruction in the ureter, bladder or urethra.

J. D. ROLLESTON.

Colon bacillus cystitis, with alkaline urine (*'Pediatrics,'* 1913, xxv, p. 579).—**F. van der Bogert** records a case in an infant girl, aged 10 months. There was no history of bowels or stomach trouble. The illness was said to have begun with much fever. Gas was passed with a loud report from the bladder both before and after micturition. Specimens of urine examined as soon as possible after passage were strongly alkaline. Bacteriological examination showed a profuse growth of *B. coli*, together with the *Staphylococcus albus*. The latter is a urea-splitting organism and might account for the alkalinity and gas formation. Recovery took place within two months under treatment with 8 gr. of formin daily.

J. D. ROLLESTON.

Retention of urine in infantile paralysis (*'Ann. de Méd. et Chir. inf.,'* 1914, xviii, p. 40).—**Schreiber and D'Allaines**.—It is generally held that in poliomyelitis the sphincters escape, but this is often not so. The writers quote the case of an infant, aged 9½ months, who for twenty-four hours at the commencement of the illness passed no urine; the bowels did not act for several days. There was paralysis of both legs. Excessive sweating is another symptom which is present in three quarters of the cases.

J. PORTER PARKINSON.

Vulvo-vaginitis in young children (*'Arch. of Ped.,'* 1913, xxx, p. 650).—**N. Barnett** reports on fifty cases of vulvo-vaginitis in children. The secretion was obtained by means of a platinum loop introduced into the vagina. The cervix was involved in all cases. Complications occurred in six cases—arthritis of shoulder, arthritis of wrist, general peritonitis, pelvic peritonitis and painful heel. Treatment included (1) irrigation with potassium permanganate 1 in 1000, perchloride of mercury 1 in 4000, Lugol's solution of iodine 1 in 500; (2) instillation with nitrate of silver, 1 in 400, and argyrol 10 per cent.; (3) vaginal swabbing with 10 per cent. nitrate of silver; (4) application of Lugol's iodine solution to the cervix through an endoscope. With all these methods the discharge soon ceases, but smears may remain positive for months afterwards. Vaccines were tried in fourteen cases (5 to 100 millions at intervals of three to seven days) without any improvement as regards the discharge, but the cases of arthritis were cured. Cases treated through the endoscope did much better than those treated by irrigation alone. **McNeil** (*ibid.*, p. 657) obtained a positive reaction by the complement-fixation test for gonorrhœa in eight cases of vulvo-vaginitis a year or more after infection, which perhaps shows that the infection may be active after local signs have disappeared.

C. F. MARSHALL.

The diagnosis of masturbation in girls (*'New York Med. Journ.,'* 1913, xcvi, p. 772).—**B. Kaufman** recommends the following new method:

Examine the urine microscopically to determine the absence of yeast. Let the child play with some yeast at night and then, without letting her wash her hands, put her to bed in a short night-gown. Urine should be passed into a clean vessel next morning. The presence of yeast in a centrifuged specimen is proof positive of masturbation.

J. D. ROLLESTON.

Precocious menstruation (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 563).—**F. P. Gengenbach** limits the term "precocious menstruation" to cases of more or less periodical menstrual discharge occurring in children before its usual appearance at the age of puberty. The condition is usually accompanied by signs of precocious maturity, *i.e.* "the premature development of the whole organism concurrently with menstruation and ovulation" (Morse). The writer reports the case of a child whose father was a Jew and mother an American. The first tooth erupted at ten months, at which time the menstrual flow first appeared, lasting three days. The discharge was of bright red blood from the vagina, with a slight menstrual odour. At this time the child seemed rather large for its age, but no other signs of precocious maturity were noticed. Menstruation recurred at intervals of from one to three months, most frequently at intervals of six weeks. The child menstruated eight times in fourteen months. For a few days before the periods a slight leucorrhœa was noticed; the child was rather cross and acted as if in pain. When seen at the age of two years she was a large, well-developed child of the Jewish type. Chest and abdominal examination negative as regards the internal organs. Weight 38 lb.; height 37 in.; chest below breasts 21 in., across breasts $22\frac{1}{2}$ in.; abdomen at navel 22 in.; breasts very prominent, about the size of half an orange; nipples well developed, with a slight areola and surrounded by a few hairs; hair quite noticeable in the axillæ and pubic hair very noticeable; mons veneris and labia very prominent; hymen well developed, the opening admitting the tip only of the little finger, preventing a digital examination of the pelvic organs. At the age of $28\frac{1}{2}$ months the child had menstruated four times in $4\frac{1}{2}$ months. The menstrual flow seemed to be increasing both in quantity and duration, and the peculiar menstrual odour was very marked. The leucorrhœa had increased, being present most of the time. The weight was $41\frac{1}{2}$ lb.; height 39 in.; chest below breasts $21\frac{1}{4}$ in.; across breasts 23 in.; abdomen at navel 22 in. The breasts were noticeably more prominent, as also was the growth of hair under the arms and about the external genitalia. Accounts of other reported cases are also given.

T. R. WHIPHAM.

Infantilism with Hanot's cirrhosis (*Ann. de Méd. et Chir. inf.*, 1912, xvi, p. 205).—**MM. Pagliano and de Luna** record a case of Hanot's cirrhosis with consecutive infantilism. The symptoms first shown were enlargement of the abdomen, liver and spleen. These appeared at the age of twelve years, and growth seemed arrested from this time. At the age of twenty the appearance of the patient was that of a boy of twelve years, with no secondary sexual characteristics. He was only just over 4 ft. in height, suffered from jaundice with discoloration of the stools, and spleno-hepatomegaly. The Wassermann reaction was negative, and the red blood-cells showed none of the characteristics of acholuric jaundice. The urine was dark. There were no signs of hypothyroidism or hypopituitarism. The patient at the age of twenty showed some evidences of pulmonary tuberculosis, but this clearly was not responsible for the retarded development.

REGINALD MILLER.

Dyspituitarism (*Am. Journ. Dis. Child.*, 1913, vi, p. 145).—**Mark Reuben** records that in 1840 Molu demonstrated the relationship of adiposity to tumours of the hypophysis, and that Marie and Marinesco were the first to draw attention to the relationship between that condition and changes in this gland. In 1891 Cunningham found that gigantism occurred in persons with unossified epiphyseal centres afflicted with pituitary disease, and that acromegaly resulted from the same pathological condition in individuals with ossified centres. Total removal of the gland causes death within two or three days, with symptoms of cachexia. Anterior lobe insufficiency in the young causes adiposity and infantilism, in the adult adiposity and sexual degeneration. Posterior lobe deficiency brings about increased sugar tolerance, hypotrichosity and adiposity. Removal of the posterior lobe causes polyuria, and diabetes insipidus is frequently associated with lesions of the chiasma or base of the brain. Stimulation of the superior cervical sympathetic ganglion elicits an increased posterior lobe secretion, which converts the body-glycogen into sugar. In hyperpituitarism there are hypertrichosis and increased activity of sweat-glands, in hypopituitarism axillary and pubic hair are often wanting, and the nails are small and crescentless; in hyperpituitarism there are lack of concentration and irritability, in hypopituitarism enfeeblement of memory and disorientation. The tumours cause pressure-symptoms, among which headache and vomiting are especially common. Primary optic atrophy is a common local symptom, followed as the growth increases by neuritis. Distortion of the visual fields is common, occurring first in the colour- then in the form-fields. A hemiopic pupillary response and a negative oculomotor reaction to the prism deflection of the blind half of the retina may be expected when only half blindness is complete. Involvement of other nerves produces anosmia and trifacial neuralgia. Pressure on the central peduncles produces spasticity. Deformations of the sella turcica are of three types: (1) Thickening of the clinoid processes and of the dorsum epiphii; (2) thinning and absorption of these parts; (3) total destruction. In acromegaly the necropsy most commonly reveals sarcomata of the pituitary body, followed closely in order of frequency by adenomata and hyperplasias. Various clinical types are then described: (a) Fröhlich type, due to hyposecretion of the posterior lobe characterised by ocular and other neighbourhood symptoms without acromegaly. Adiposity with genital aplasia and hypotrichosis are present. (b) Bromier type, due to hyposecretion of both lobes, characterised by optic nerve atrophy, marked dwarfism, adiposity and atrophy of external and internal genitals. (c) Mixed types of Cushing due to alteration of hypo- and hypersecretion of one or both parts of the glands. With regard to diagnosis, posterior lobe insufficiency is indicated if orally 150 grm. of glucose and 100 grm. of lævulose can be taken without producing glycosuria. Surgical intervention is undertaken to relieve cerebral pressure by subtemporal and to mitigate headache by sellar decompression. Fragmentary extirpation may be attempted; radium should be used after operation, and the whole gland given orally or hypodermically.

CHRISTOPHER ROLLESTON.

A case of congenital abnormal size of the extremities with a symptom-complex resembling acromegaly (*Jahrb. f. Kinderheilk.*, 1912, LXXV, p. 540).—**V. Salle** describes the case of a boy who at the age of six weeks showed the following characteristics of acromegaly: Large nose, prominent chin, large lobes of the ears, big tongue, very long fingers and toes.

Death occurred at two and a half months of age, and section revealed an enlarged sella turcica and a protuberant hypophysis containing numerous eosinophile cells.

F. R. B. ATKINSON.

The chemical composition of the thymus gland in children (*Arch. f. Kinderheilk.*, *Baginsky Festschrift*, 1913, p. 491).—**L. Mendelsohn** finds the composition of the gland to be watery contents 81–82 per cent. and dry substance about 19 per cent. Of the dry substance about 82 per cent. contained nitrogen, 7 per cent. was fat, and 9 per cent. ashes.

F. R. B. ATKINSON.

The function of the thymus gland (*Amer. Journ. Obst.*, 1913, LXVII, p. 808).—**A. E. Lampé** gives a brief account of the researches which have been made into the functions of this gland. When the thymuses of dogs were completely extirpated at the time of their greatest activity the following results were obtained: At first the thymectomised animals developed exactly as the control dogs. Accordingly the first two to four weeks are known as the “latent period.” Afterwards characteristic differences soon appeared. In the thymectomised animals a marked layer of fat developed; if one touched them they were found to be soft and flabby and the muscles were less firm. Whilst the control dogs ran about for hours at a time, those operated upon rested every few minutes. The gait became wide and awkward. If one attempted to bend the extremities a pronounced elasticity was observed. The dog operated upon was also distinguished by an enormous appetite. This second stage constitutes the “stadium adipositatis.” In about the third or fourth month other changes were added to these. The body-weight fell in spite of the ingestion of an enormous quantity of food. The weakness of the body, and especially of the bones, increased. The animals fell easily, and at times were seized with a general trembling of the muscles. The bones of the extremities bent under the weight of the body and frequent spontaneous fractures occurred. This condition continued for months, and was succeeded by imbecility, coma, general paresis and death. This last stage is known as “Stadium cachecticum,” “idiotia thymica,” “coma thymicum,” or “cachexia thymopriva.” Lampé summarises the functions of the gland thus. The thymus gland is an organ of vital importance. Extirpation at the height of its development results finally in death. Most probably its most important function consists in binding acids, thus removing injurious substances from the blood. This supposed function gives us an explanation of the disturbances occurring in the calcium metabolism after extirpation of the organ, and of the changes in the bone and central nervous system. The thymus gland occupies a dominating position over the lymphatic apparatus. Between the thymus on the one hand, and the organs of internal secretion on the other, complex relations exist. This is especially true of the spleen. This organ is, so to speak, “prepared” by the thymus to take up some of the latter organ’s still unexplained functions after involution.

FREDERICK LANGMEAD.

A case of hypertrophy of the thymus (*Semana Med.*, 1913, xx, p. 1077).—**Schweizer** had under observation an infant aged 5 months who since birth had suffered from stridor, choking, and occasional attacks of cyanosis. The suspicion of enlarged thymus was confirmed by radioscopy. As there was a possibility of the enlargement being specific 10 injections of mercury were made, but without producing any change. Operation was then carried out, and a piece of the thymus weighing 6 grains removed.

The symptoms, however, persisted. Intubation was performed, and the child then breathed easily without stridor or choking. The cause of the difficulty in breathing was then ascertained to be either at the beginning of the trachea or in the larynx below the cord. The enlarged thymus was not the cause of the stridor. The child is still under observation.

M. D. EDER.

Tracheal obstruction due to thymus gland (*Arch. of Pediat.*, 1913, xxx, p. 680).—**H. L. Lynah**.—A child, aged $3\frac{1}{2}$ years, had been intubated for laryngeal diphtheria. Removal of the tube after a few days was followed by marked dyspnoea, so that the tube had to be re-inserted. There were marked signs of a bronchiectatic cavity in the lower lobe of the lung and marked symptoms of thymic asthma. An enlarged thymus was found by the X rays. The child had been asthmatic since birth, but had never had convulsions. Injection of antitoxic sera on two occasions for the diphtheria never produced anaphylaxis, although the child was of the type associated with the *status lymphaticus*.

F. R. B. ATKINSON.

Röntgen-ray treatment of thymus hypertrophy (*Cleveland Med. Journ.*, 1913, xii, p. 341).—**C. W. Wyckoff**.—Since 1907, when Friedlander reported the first case treated successfully in this way, some fifteen similar cases have been recorded. Wyckoff adds three more, two of whom recovered completely and the other was improving under treatment. He states—(1) that the Röntgen ray properly used seems to be the most efficient means of treating enlarged thymus with symptoms of thymic asthma, and no harmful results have as yet appeared. (2) Severity of symptoms must regulate the number of exposures. (3) A short strong exposure of five or eight minutes will accomplish the same results, without danger, as fifteen or twenty minutes' weak exposure. (4) Not only does relief from symptoms follow, but there is a marked improvement in the general condition of the child. (5) The diagnosis of enlarged thymus depends chiefly upon the symptoms, the radiogram and the result of Röntgen-ray exposure. Physical findings cannot be relied upon.

FREDERICK LANGMEAD.

Some congenital abnormalities of the thyroid gland (*Austral. Med. Journ.*, 1913, ii, p. 1087).—**S. Pern** describes two cases of babies born with a goitre, which in one disappeared with thyroid extract and in the other with calcium lactate.

F. R. B. ATKINSON.

Congenital bronchocele (*Med. Chron.*, 1913, xxvi, p. 22).—**E. D. Telford** describes the case of a child, aged 14 days, suffering from dyspnoea and cyanosis and an enlarged bronchocele. The urgency of the symptoms necessitated surgical intervention. The tumour was removed, the symptoms disappeared immediately, and recovery ensued. The author believes hemi-thyroidectomy to be the operation for choice.

F. R. B. ATKINSON.

Congenital cyst of the thyroid gland in a child aged 1 year, producing death by asphyxiation (*Am. Journ. Dis. Child.*, 1913, vi, p. 408).—**H. C. Clark** and **A. G. Farmer**.—The child was not taken ill till twenty-eight hours before death, when dyspnoea set in and gradually increased. A doctor was not called till after death. The neck was enormously swollen owing to the presence of a tumour, which, when dissected

out, measured 6 cm. in its vertical diameter, 6·5 cm. in transverse diameter, and 2·5 cm. in antero-posterior diameter. The tumour caused marked stenosis of the trachea for about 2 cm. Microscopical examination showed the tumour to be a foetal adenoma with hæmorrhages and cystic changes in its neighbourhood. A marked degree of lymphatism was also found. The thymus weighed 47 grm., but had not caused any tracheal or bronchial compression.

J. D. ROLLESTON.

Infantilism with dysthyroidal symptoms (*Med Record*, 1913, LXXXIII, p. 681).—**R. H. Hoffmann** reports a case of infantilism in a man, aged 21 years. He was short in stature, sexually immature, and mentally a boy of about twelve years. Good pictures of the case are shown, and they certainly suggest a condition of infantilism due to hypothyroidism. The author, however, excludes this, as the pulse-rate is 90–110 per minute, the sugar tolerance normal, and the sella of natural size, and regards the case as one of dysthyroidism.

REGINALD MILLER.

Mongolism in children (*Jahrb. f. Kinderheilk.*, 1912, LXXVII, p. 317).—**W. Shukowsky** and **R. Aisenberg** review the literature and record a case in a female child, aged 2 years, in whom mongolism was associated with myxœdema, as shown by swelling of the subcutaneous tissue of the neck and below the scapulæ. Under thyreoidin treatment the swellings disappeared and the weight sank, but the mongolism was unaffected.

J. D. ROLLESTON.

Gaucher's disease (large-celled splenomegaly) (*Am. Journ. Med. Sci.*, 1913, CXLVI, p. 863).—**N. E. Brill** and **F. S. Mandlebaum**, in an elaborate paper on what is commonly called the Gaucher type of splenic anæmia, separate this disease from splenic anæmia on the grounds that its morbid anatomy is unique and its clinical features distinctive, and to emphasise this suggest the title Gaucher's disease. Its characteristic features are: incidence in childhood with insidious onset, usually before twelve years of age; its familial, but not hereditary occurrence; the large size of the spleen, which often becomes colossal (average weight 7·2 lb.), followed by a similar hepatomegaly; a brownish-yellow discoloration of the skin; a peculiar yellowish, wedge-shaped thickening of the conjunctiva, commonly present on both sides of the cornea; the prolonged course of the disease, which does not materially disturb the general health; late in the disease a liability to hæmorrhages, especially from the nose and gums and into the skin as the result of the slightest damage; even in the earliest stages there is leucopænia, and the total leucocyte count may fall as low as 500 per c.cm., but anæmia is a late event; jaundice does not occur and ascites is exceptional. The spleen, liver, lymphatic glands and the bone-marrow contain large cells, 20–40 μ in diameter, with small nuclei and cytoplasm which often appears wrinkled. These cells do not contain any neutral fat, cholesterin, or cholesterin esters; chemical tests for the presence of lipoids are now being carried out. The affected organs give the reaction for iron. The authors accept fourteen cases only of this condition, twelve of which were in females. The average duration of the disease in patients who did not die from splenectomy was 19·2 years; in one instance it was 36 years. As the morbid process is not confined to the spleen, removal of that organ cannot be regarded as a panacea, but the results thus obtained appear more successful than those of any other method of treatment.

H. D. ROLLESTON.

Salts of calcium in the organism of rachitic and tetanic infants (*Riv. di Clin. Ped.*, 1913, xi, p. 721).—**L. Pollini** details the results of his investigations on six cases in which he estimated the amount of lime present in each of the organs. There was no special distribution of lime in the organism of children with rickets or spasmophilia. The diminished retention of lime in the skeleton in rickets did not extend to other organs. In both diseases there was a marked accumulation of lime in ductless glands and in the cartilages, but little can be inferred from this fact. These negative results point to the conclusion that hypocalcification of the organism is not a constant feature in spasmophilia or rickets; on the contrary, the tissues are often rich in lime. If, therefore, deficiency of lime has any connection with these diseases, the exact relation must be very complex, and dependent in some way not only on the abnormal distribution of this salt, but also on disturbances in equilibrium of the relations which normally exist between the various salts as regards synergic or antagonistic action.

VINCENT DICKINSON.

Otology, Rhinology and Laryngology.

The treatment of persistent otorrhœa in infants and young children by the establishment of post-auricular drainage (*Med. Record*, 1913, LXXXIV, p. 157).—**Wendell C. Phillips** suggests this measure in cases in which otorrhœa has become persistent after removal of tonsils and adenoids and the failure of other treatment. His reasons are: (1) It quickly terminates an otherwise persistent otorrhœa; (2) it insures against an extension of local bone necrosis; (3) it prevents the case from becoming a chronic purulent otitis media, with all that the name implies regarding a chronic offensive discharge, loss of hearing, bone necrosis and possible serious and fatal complications; (4) finally—the most important reason—it restores and retains the hearing function. The cases he has operated upon had complained of discharge for from six weeks to five years. The results have been most favourable in young children when performed any time between four weeks and three months.

MACLEOD YEARSLEY.

Preventable deafness (*Med. Record*, 1913, LXXXIV, p. 569).—**W. H. Tomlinson** emphasises the following points: (1) Middle-ear deafness comprises about 80 to 90 per cent. of all forms of deafness. (2) Ninety per cent. of the cases of middle-ear deafness have their origin in inflammatory conditions of the naso-pharynx with extension to the ear by way of the Eustachian tube. (3) Adenoid tissue in the epipharynx is the most frequent predisposing cause of middle-ear disease. (4) Systematic aural examination in adenoid cases discloses the fact that a high percentage, probably 75 per cent., have some grade of ear involvement. (5) The findings of routine ear examination in children with adenoids confirms him in the belief that many cases of middle-ear deafness first noticed in adult life have their origin in inflammatory conditions of the naso-pharynx dating from childhood. (6) The milder acute forms of catarrhal otitis should receive appropriate treatment, for if untreated they are liable to assume the chronic form. (7) Routine treatment of chronic catarrhal deafness leaves much to be desired. More careful work is necessary if the best results possible are to be secured. (8) This is an age of preventive medicine. Possibly in no other field is there better opportunity than in the prevention of chronic middle-ear disease and its deafness.

MACLEOD YEARSLEY.

Mouth-breathers and deafness (*Brit. Med. Journ.*, 1913, I, p. 881).—**J. Priestley**, at a meeting of the Staffordshire branch of the British Medical Association, discussed the question of mouth-breathing and enlarged tonsils in relation to deafness, and illustrated his statements by reference to the data brought to light at school medical inspections. If the deaf cases among children generally were enumerated, it would, he said, be found year after year that they were about 6 per cent.; but if these children who breathe through the mouth were investigated it would be found that 38 or 40 per cent. of them were deaf. If, however, the children with enlarged tonsils were taken and all those rejected who, in addition to having large tonsils, breathed through the mouth, the proportion of deaf cases among the remainder was again only about 6 per cent. This showed that enlarged tonsils as such did not entail any danger of deafness. Similar conclusions were come to regarding adenoid growths on the naso-pharynx. It was the mouth-breathing which entailed the danger.
J. ALLAN.

The prevention of mouth-breathing (*Clin. Journ.*, 1913, XLII, p. 490).—**Warwick James** discusses the usual results of mouth-breathing. He describes a wire frame over which a sheet of rubber dam is stretched and the whole placed inside the mouth, resting on the outer surfaces of the teeth and gums.
MACLEOD YEARSLEY.

Hysterical deafness in children (*Med. Chronicle*, 1913, XXVI, p. 31).—**J. Arnold-Jones** describes three cases of hysterical deafness which are of great interest to all concerned with child deafness. The patients were a boy aged 3 years, a girl aged 3 years, and a girl aged 8 years. In only one were other hysterical stigmata present. In all three deafness was apparently central, sudden in onset, and in the first two occurred after fright. Syphilis was excluded.
MACLEOD YEARSLEY.

Dumbness in children who can hear (*Wien. klin. Rundschau*, 1913, XXVII, p. 2587).—**Fröschels** deals with the children in whom the auditory centre, Broca's centres, or the paths from Wernecke's centre to Broca's are affected. The child can hear but is unable to utter any sounds. To recognise the absence of deafness is not easy. In the external auditory canal of deaf-and-dumb children no tickling sensation is produced when the canal is gently stimulated by a cotton-wool mop—normal children or these dumb children shake the head or laugh. Soft-sounding bells can be used to awaken the centre, and by series of graduated practice full speech can be obtained. In other cases in which Wernicke's centre is affected, the centre can be re-educated by the eye or touch, and the acoustic centre be gradually brought into association with the centres for vision and touch. Rickets, pneumonia, and whooping-cough seem to be predisposing causes; in sensory dumbness convulsions are an almost invariable antecedent. Treatment is very satisfactory: Fröschels has had 100 per cent. cures, including cases of twelve, fourteen, and twenty years' dumbness.
M. D. EDER.

Toxic acoustic neuritis and changes in the corresponding ganglia in diphtheria (*Zeitschr. f. Ohrenheilk.*, 1913, LXVII, p. 193).—**L. Lewin** examined the acoustic nerves of fifteen children who had died of diphtheria, and in seven cases, in four both nerves and in three one nerve, he found changes in both nerves and ganglia. In three cases where the nerves were intact changes were present in the ganglia. This finding showed that the disease of the ganglia was primary and that of the nerves secondary. Lewin

regards the condition as a retro-labyrinthine acoustic neuritis, and thinks the lesions were of circulatory origin and due to the thrombotic action of diphtheria toxin. No examination of the auditory function was made during life in these cases.

J. D. ROLLESTON.

The value of nasopharyngeal surgery in the treatment of chronic exudative otitis media (*Johns Hopkins Hosp. Bull.*, 1913, xxiv, p. 289).—**H. O. Reik** considers that the relationship between nasopharyngeal conditions and commencing and progressing middle-ear disease has been thoroughly established, and that the early correction of such abnormalities is good prophylactic medicine. The possibility, however, of relieving chronic middle-ear conditions by removing the nasopharyngeal trouble is not so universally agreed upon. Reik believes that failures in this treatment can be explained, and gives the results of a careful study of a series of such cases from his private practice. Out of 34 cases, 32 showed immediate improvement, 2 showed no change. Later, 26 remained improved, 4 showed additional improvement, and only 2 lapsed back. From his cases he deduces that correction of nasopharyngeal abnormalities will almost certainly check the advance of the aural disease, and, in some instances, result in improvement. It is not, however, possible to predict what will happen. Failure lies in incomplete or improperly performed operations.

MACLEOD YEARSLEY.

Case of recurring fibroma of the naso-pharynx (*Austral. Med. Gaz.*, 1913, xxxiii, p. 541).—**W. N. Robertson** describes this case in a child, aged 10 years. The fibroma recurred on one occasion, the second time permanently.

F. R. B. ATKINSON.

Development of the pharynx by muscular exercises after operation for adenoids (*Lancet*, 1913, ii, p. 1758).—**F. Warner** advises exercises of the pterygoid muscles for the purpose of developing the bony boundaries of the pharynx. These, as well as special breathing exercises, are described fully in the paper, which should be read *in extenso*. Warner refers specially to these exercises in feeble-minded children.

MACLEOD YEARSLEY.

Removal of adenoids by direct inspection (*Ann. of Otol.*, 1913, xxii, p. 273).—**J. C. Beck** draws forwards the soft palate by means of a catheter passed through the nose. The head is extended and a good view of the naso-pharynx is obtained under complete anaesthesia. The adenoid mass is then removed completely with whatever instrument the operator prefers.

MACLEOD YEARSLEY.

Why does the operation for removal of adenoids frequently fail to relieve mouth-breathing? (*Arch. of Ped.*, 1913, xxx, p. 727).—**H. M. McClanahan**, from an investigation of 52 children, concludes that (1) a careful examination of the case before operation will determine with a reasonable certainty the degree of relief that will follow the removal of adenoids; (2) where there is a deformity of the superior maxilla a frank statement of the facts will relieve the operator from unjust criticism; (3) where anatomical defects exist parents should be told the facts and given the opportunity to have corrective treatment instituted by the ortho-dentist; (4) the best evidence of such defect is malcoaptation of the teeth.

MACLEOD YEARSLEY.

The cause of enlarged tonsils and adenoids in children and their treatment with lymphatic gland extract (*Brit. Med. Journ.*, 1913, I, p. 1159).—**Hugh T. Ashby** advances the theory that the enlargement of the tonsils and adenoids is an attempt on the part of Nature to augment the lymphoid tissue of the body and supply a deficiency of this tissue in other parts of the body. He has, therefore, prescribed lymphatic gland extract (prepared in the same way as thyroid gland extract), 5 gr. thrice daily. About thirty cases have been treated in this way. No bad effects have been observed, and nearly all the children have improved in a very satisfactory way; the snoring and noises in breathing have disappeared and the tonsils have diminished in size. J. ALLAN.

The treatment of adenoids and enlarged tonsils without operation (*Brit. Med. Journ.*, 1913, I, p. 1157).—**W. Steuart** advises the use of the X rays and gives a series of illustrative cases. Röntgen rays have a stimulating effect on chronically inflamed adenoid tissue and enable it to resume its healthy condition. The tonsils do not entirely regain their normal size, except in favourable cases, but the decrease in size is sufficient to dissipate all obstructive symptoms. Conditions dependent on the septic state of the tonsils and adenoids are relieved. Objection is raised to surgical treatment on the grounds that it cannot be right to remove tissues that have a definite function, and that there might be the risk of disseminating tuberculosis in tonsils which owe their enlargement to that disease. The radiological method takes longer, but there is no shock to the child and no convalescent period. The dose used never exceeded half a Sabouraud dose. Some points in connection with technique are appended. J. ALLAN.

Diseased faucial tonsils and their treatment (*Pacific Med. Journ.*, 1913, LVI, p. 669).—**C. P. Johnson** emphasises the following points: The importance of the supra-tonsillar fossa; that normal tonsils atrophy after puberty; that the direction of the crypts in the upper third of the tonsil is downward and outward; the importance of the tonsillar artery; that diseased tonsils produce a foul breath; the importance of an early differential diagnosis between diphtheria and follicular tonsillitis; the relation of the tonsils to the thyroid gland; that diseased faucial tonsils may be the cause of caries and irregular alignment of the teeth; that diseased tonsils are injurious to the voice; the tonsil as a site of tuberculosis; the value of surgical treatment in diseased faucial tonsils; that alypin is the best local anæsthetic; and that the removal of tonsils should be guided by a sane and safe conservatism and common-sense. MACLEOD YEARSLEY.

Albuminuria in chronic tonsillitis (*Thèses de Paris*, 1912-13, No. 404).—**M. Tarim**.—Albuminuria may occur as a complication of chronic tonsillitis (enlarged tonsils, caseous follicular tonsillitis or chronic abscess of the tonsils). It may be continuous or intermittent and is almost always accompanied by hæmaturia, which may be visible to the naked eye or only revealed by the microscope. It is difficult to associate this albuminuria with any definite form of nephritis. In any case the lesions are very superficial and readily clear up when the cause is suppressed by operation. The thesis contains the histories of twenty-six cases, seven of which occurred in children aged from six to fifteen years. J. D. ROLLESTON.

Conservation of the faucial tonsil (*Cleveland Med. Journ.*, 1913, xii, p. 769).—**S. H. Large** clearly sums up the functions of the tonsils and the indications for their removal thus: Physiologists differ as to their functions. Problematical are (1) formation of leucocytes; (2) phonetic; (3) mechanical, as an aid to swallowing; (4) secretion of an anti-bacterial body. At the present time, in the young, the tonsil is looked upon as the watch-dog of the respiratory tract. Tonsils should be removed (1) when hypertrophy interferes with breathing; (2) in recurrent tonsillitis; (3) in peritonsillar abscess; (4) in recurrent cervical adenitis and tuberculous cervical glands; (5) when the crypts are filled with caseous masses; (6) in attacks of rheumatism associated with tonsillitis, or where the tonsil is suspected of being the focus of infection, in other diseases, as nephritis, endocarditis, arthritis, etc.

MACLEOD YEARSLEY.

Some causes of disappointment following removal of tonsils and adenoids (*Lancet*, 1913, ii, p. 1612).—**W. Wilson** refers to extension of growth into Rosenmüller's fossæ and its effect upon the tensor palati, levator palati and salpingo-pharyngeus muscles, and insists upon careful attention to this region in operation. Failure to remove posterior ends of enlarged turbinals is also noted. He also insists upon the importance of after-treatment by (1) healthy exercises, (2) Politzerisation, and (3) orthodontal treatment.

MACLEOD YEARSLEY.

The hæmorrhage of tonsil and adenoid operations (*Clin. Journ.*, 1914, xliii, p. 49).—**J. F. O'Malley**, after a brief review of the literature, discusses the normal arrest of hæmorrhage and then passes on to the question of unusual hæmorrhage. Hæmophilia, he believes, is too frequently urged as an explanation of bleeding of an ordinary surgical type. Age may affect hæmorrhage from increased vascularity. In his opinion the method of removal has a decided influence over the amount of bleeding, which is decidedly less when the anæsthesia is by nitrous oxide gas, probably owing to the fact that perfect vaso-motor control is maintained.

MACLEOD YEARSLEY.

Results in a series of cases of tonsillectomy at the Massachusetts General Hospital three to four years after operation (*Ann. of Otol.*, 1913, xxii, p. 421).—**J. P. Clark** analyses 143 cases, most of them under fifteen years of age. Hæmorrhage calling for special treatment was rare. The condition for which operation was performed was relieved in very nearly every case, with great improvement in general health. Ordinary voice or speech was practically unaffected.

MACLEOD YEARSLEY.

Tonsillectomy under local anæsthesia; new operation (*Journ. Amer. Med. Assoc.*, 1913, lxi, p. 1227).—**B. D. Sheedy** finds that as the result of enucleation of the tonsils the following deformities occur: (1) The pillars on both sides seem to disappear, leaving a flattened surface where the tonsil and pillars formerly were and a much narrowed opening into the naso-pharynx; (2) the pillars on both sides seem to grow together, leaving but one pillar where there were formerly two, with the uvula pulled to one side or the other; (3) the anterior pillar wholly disappears and a large amount of cicatricial tissue is deposited on the surface of the posterior pillar, altering its shape and function. He therefore advocates a method of operation by eversion of the tonsil. In adult patients the surface of the tonsil

and pharynx is first swabbed over with a 10 per cent. solution of cocaine. Then a 1 to 1·5 per cent. solution of bisulphate of quinine is injected into the cellular tissue surrounding the capsule of the tonsil, which causes the operation to be painless. In children under fourteen years of age ether should be employed. A tenaculum is inserted as deep as possible into the centre of the gland, *avoiding the capsule*, and a grasp is taken of the tissues extending from one side of the capsule to the other. Traction is then made until the junction of the mucous membrane with the capsule is apparent. A small blunt-pointed tonsil-knife is introduced under the mucous membrane at the point of junction with the capsule and an incision made around the tonsil. If the capsule is so contracted that the gland will not invert a nick is made in the upper angle of the capsule. With more traction the tonsil is then completely inverted and around the mass is placed a snare, the wire of which slips into the incision previously made. The tissues are then slowly cut through, one to three minutes being occupied in so doing. The tonsil is then removed without injury to the pillars—without pain and without hæmorrhage. In certain cases the capsule will not evert. These are: (1) Cases of exceedingly large tonsil in which the hypertrophied tissue escapes from the capsule and everts the tonsil; (2) cases in which the oropharyngeal surface of the tonsil is so limited by a contraction of the capsule holding within itself a limited mass of cicatricial tissue that it in no way resembles a tonsil; and (3) cases in which the tonsil is only slightly hypertrophied, but in which the cicatricial tissue surrounding the capsule has been displaced by fibrous bands due to previous attacks of inflammation and peritonsillar abscess.

T. R. WHIPHAM.

Vincent's angina (*New York Med. Journ.*, 1913, xcvi, p. 468).—**L. Green** has seen this occur after measles, scarlet fever, whooping-cough, and diphtheria, especially in ill-nourished children. One child infected its clitoris, and another its rectum. A small epidemic was traced to the matron feeding several children with the same spoon. Green found trichloroacetic acid applied in full strength the most successful method of treatment.

J. D. ROLLESTON.

Complications of Vincent's angina (*Presse oto-laryng. belge*, 1913, xii, p. 145).—**V. Delsaux** records two fatal cases: (1) Woman, aged 25 years. Gangrene of left tonsil and part of soft palate. Death from sudden hæmorrhage from the tonsil. (2) Boy, aged 16 years. Ulceration of left tonsil and anterior pillar. Severe constitutional disturbance. Wassermann positive. Death from progressive anæmia on twenty-second day of disease. Blood-examination: Hæmoglobin 60 per cent., red cells 1,560,000, leucocytes 1200. Differential cast: Large mononuclears 16 per cent., small mononuclears 40 per cent., neutrophils 44 per cent., eosinophiles and basophiles 0. Delsaux recommends that in Vincent's angina intravenous injections should be associated with local applications of salvarsan as soon as anæmia develops or other complications are to be feared.

J. D. ROLLESTON.

The Bacillus fusiformis as a cause of meningitis and cerebral abscess after injury to the pharynx by a foreign body (*Monatsschr. f. Ohrenheilk.*, 1913, xlvii, p. 1021).—**V. Frühwald**.—A girl, aged 4 years, swallowed a sewing-needle, which stuck in the posterior wall of the pharynx, and broke off in attempts to remove it. A retropharyngeal abscess developed, which was treated by mediastinotomy, but three weeks later symptoms of

meningitis supervened. Lumbar puncture gave issue to a turbid fluid under high tension containing polymorphonuclears and mononuclears. Death occurred three months after the needle had been swallowed. Necropsy: The left frontal lobe showed an abscess the size of a hen's egg, which had perforated into the lateral ventricle, and there was diffuse meningitis limited to the base with green stinking pus, from which the *Bacillus fusiformis* was cultivated. Between the two middle cervical vertebrae was a fistulous opening and a retro-pharyngeal abscess. There was a collection of pus beneath the spinal dura mater.

J. D. ROLLESTON.

Safety-pin removed from larynx of child by direct laryngoscopy (*New York Med. Journ.*, 1913, xcvi, p. 313). — **Harmon Smith.** — Child, aged 2½ years. The pin was extracted without difficulty or hæmorrhage thirty-seven days after the onset of symptoms, during which time the condition had been mistaken for bronchial croup, diphtheria and laryngeal papilloma.

MACLEOD YEARSLEY.

Acute primary œdema of larynx in children (*Thèses de Paris*, 1912-13, No. 329). — **J. Ernoul.** — This is a very rare affection. The efficient cause is microbial infection, but the organism varies—sometimes the pneumococcus, and sometimes the staphylococcus and spirilla or an association of these germs being present. The condition may be very difficult to distinguish from laryngeal diphtheria, but the dyspnœa is of an inspiratory type, and the voice and cough are little or not at all affected. In many cases bacteriological examination alone settles the diagnosis. Treatment in mild cases consists in applications of warm compresses to the neck, antispasmodics and steam; in some cases tracheotomy alone is indicated. Intubation may either produce a fatal spasm, or the upper end of the tube may be obstructed by the laryngeal œdema. The thesis contains the histories of five cases, one of which is original.

J. D. ROLLESTON.

Reviews.

THE DISEASES OF CHILDREN. By J. F. GOODHART, Bt., M.D., F.R.C.P., and G. F. STILL, M.D., F.R.C.P. Tenth Edition. London: J. & A. Churchill, 1913. Price 16s. net.

There is little that need be written of this favourite text-book, save to extend a hearty welcome to the new and tenth edition. With each succeeding edition it is interesting to compare the new with the old: particularly is this the case in the present instance, where each author has such a distinctive style that one can trace, or fancies one can trace, the authorship of each paragraph. In this edition the preface stands over Dr. Still's name. Some new chapters have been added, notably one on influenza, and some re-written; while the rest of the book has been revised to date.

It is curious to note that where the book deals with chronic arthritis, two separate but consecutive paragraphs are entitled "Rheumatoid Arthritis or Osteo-arthritis" and "Chronic Arthritis with Enlargement of Glands and Spleen (Still's Disease)."

It is certainly a responsible task to have the keeping of this widely appreciated text-book up to date, and we offer our congratulations upon the way in which it has once more been carried out.

R. M.

ORTHOPÉDIE ET TUBERCULOSE CHIRURGICALE. No. 1, January, 1914. Pp. 92. Subscription, 15 francs for France, 18 francs for other countries. Paris: Baillière et fils.

Messrs. Ménard, Calvé and Lamy have every reason to be congratulated on the excellence of the first number of the new periodical they edit, 'Orthopédie et Tuberculose Chirurgicale.' In their editorial they draw attention to the close association of tuberculous disease with many of the deformities, and therefore include the word in the title of the periodical.

Of the many excellent articles, perhaps the most instructive is one by Dr. V. Ménard himself on the correction of the spinal deformity caused by Pott's disease. His arguments are clear, the illustrations good, and the X-ray photographs of the actual cases most convincing. There is an excellent article on scoliosis by Dr. Robert W. Lovett, of Boston, followed by one on the Hospital and College at Alton, by the Superintendent, Dr. H. G. Gauvain. There is a paper on the treatment of scoliosis by rotation, by Dr. Mackenzie Forbes, of Montreal, with a discussion on the subject by Dr. H. Rupert Derome. A paper by Dr. L. Lamy on torsion of the tibia also calls for mention. There are many other excellent papers which will repay study, but time and space preclude giving details. There is an excellent review of the recent literature on the orthopædics of all countries given at the end of the magazine.

The editors are backed by an imposing list of collaborators, and if the standard of the first number is maintained the prosperity of the venture is assured. We wish it all success. D. C. L. F.

THE HEALTHY MARRIAGE. By G. S. WRENCH, M.D., B.S. London: J. & A. Churchill, 1913. Price 3s. 6d. net.

The practical information in this book is on the whole quite sensible; any woman might read with probable advantage Dr. Wrench's remarks on high heels, sleep, eggs, and hobbies. He is no faddist, and is especially to be commended in these days for not seeking to impose laws as to how a woman should do her hair or cook her dinner. He sees that a little wine or beer may be a pleasant thing, though it offend hygiene; he can even write somewhat kindly of the corset.

The author has a number of delusions on the habits and thoughts of primitive man, the Orientals, and Western girls. There is no great harm in wishing that English people should imitate the habits of the East, but it is well to be properly acquainted with those habits before giving advice. It is a pity that the little book should be marred by so many scraps of Tupper philosophy. M. D. E.

SANATORIA FOR THE TUBERCULOUS. By F. R. WALTERS, M.D., M.R.C.P. London: George Allen & Co., Ltd., 1913.

THIS work may be looked upon as a supplement in many ways to the 'Tuberculosis Year-Book' (see BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, xi, p. 96), in that it contains a description of numerous sanatoria in the countries of Europe, a part of the subject very slightly touched upon in the latter work. In addition, the book contains a description of the various sanatoria in the British Isles, and a general part dealing with the sites for sanatoria, the objects which should be kept in view in the building of the same, and the results of treatment therein. The book is a valuable work of reference, and should be in the hands of all authorities dealing with the erection of sanatoria, as they will obtain from it many valuable hints.

F. R. B. A.

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Original Articles.

A CONTRIBUTION TO THE STUDY OF A GROUP OF
CASES OF CHRONIC RECURRENT DIARRHŒA IN
CHILDHOOD.*

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(Continued from p. 155.)

IN the first part of this paper published in the preceding number of this JOURNAL we have already given some clinical examples, which we continue here, and conclude with some general observations upon the condition, dealing chiefly upon the practical side of the subject.

CASE 6.—Male, aged 4 years 10 months. He was admitted to hospital in February, 1913, with the history that he had suffered frequently from attacks of severe diarrhœa ever since birth, his stools containing sometimes mucus and undigested food.

He had been subject to attacks of abdominal pain, which were associated with marked swelling of the abdomen and vomiting, and was described as always thirsty. He had never attempted to walk. He had pertussis when aged 3½, and, as an infant,

* A paper read before the Medical Section of the Royal Society of Medicine on October the 28th, 1913.

was bottle-fed. He was described as a remarkably undersized boy with marked signs of rickets.

The skin of his face and head was rough and dry, his teeth extremely defective and carious. His abdomen was prominent but not tender on palpation; the liver extended $1\frac{1}{2}$ in. below the costal margin. The stools were dark in colour, slimy, with mucus and semi-formed. He was given a diet of milk and cereals and the carious teeth removed. He left the hospital after a month's treatment somewhat improved, having gained in weight from 1 st. 6 lb. to 1 st. 6½ lb.

CASE 7.—Female, aged 4 years. This patient was under treatment, with characteristic cœliac symptoms, from April the 6th until July the 5th, 1913.

She was brought to hospital for backwardness. Her mother, who was unusually intelligent, had studied the child's case carefully, and was able to describe the illness with some accuracy. She stated that since the hot summer of 1911, when the child had suffered from a severe attack of acute summer diarrhœa, her digestion had been impaired and her bowels had never acted properly. During the three days prior to admission to hospital the child's motions had been white and solid, but before this she had frequent diarrhœa, the dejecta resembling weak tea. With reference to her previous history, it was stated that the child was a healthy baby, breast-fed for fourteen months, and afterwards progressing normally up to the age of two years. Since the age of two, however, from the attack of acute diarrhœa mentioned above, she had made no progress and had scarcely grown at all. As regards diet, it had been noted that eggs were always liable to cause immediate diarrhœa, meat foods invariably were better borne than milk or milk puddings, while the child herself preferred water rather than milk or tea to drink. She was the second child of a family of three, and both her brothers had been born with jaundice which had lasted during ten days. They are now healthy; when admitted to the ward there was nothing characteristic in the patient's appearance. Her intelligence was approximately that of her age. Her teeth were good. She was not rachitic. The abdomen was globular, full, but not greatly distended, no mass could be felt, or thickened gut, and there was no peristalsis, umbilical pouting or hernia. The stools were bulky, pultaceous, sour-smelling, offensive yellow or clay coloured. When on fat-free diet they became less offensive, less copious and much darker, but were never formed.

Gains weight.—April the 8th, 1913: Milk diet. Stools very fatty and offensive. April the 15th, 1913: Fat-free diet. Stools better, less bulky, still not formed, darker but not natural. April the 23rd, 1913: Ordinary diet. Stools again bulky, offensive, pale, butyric odour.

Loses weight.—May the 8th, 1913: Special diet for three days. Breakfast, 2 eggs and whey; dinner, broth and steak; tea, 2 eggs and whey; supper, 2 eggs and whey. Stools very numerous, darker and much more loose and offensive.

Gains weight.—May the 10th, 1913: Eggs, bacon, cream, full diet. Stools still bulky, putty-coloured, loose.

Stools on admission resembled an inferior grade of putty, but were rather granular than pasty; the odour was sharp and perhaps butyric; usually one *per diem*.

A bacteriological examination of a stool was made and the following organisms found: Many Gram-negative bacilli, many Gram-positive bacilli, a few Gram-positive streptococci; no dysentery bacilli could be isolated from the fæces.

Under hospital treatment the child's weight gradually rose from 25 lb. to 28½ lb. It was noteworthy that she was happier and more alert when on a fat-free diet, that her colour improved, and that the number of stools *per diem* was much less than on a full diet containing an average quantity of fats. The special diet containing eggs was very ill tolerated and gave rise to a rather offensive and frequent diarrhœa.

CASE 8.—Female. This case is of very great interest. She is now aged 9 years, and has been an inmate of the hospital from time to time since she was eighteen

months old. She was brought to hospital for an attack of diarrhoea and sickness with bronchitis of a week's duration. Although healthy at birth and making fair progress during the first year of life on a diet of cow's milk and barley-water, during the latter six months her mother had been dissatisfied with her progress, and had during two months prior to admission attended the out-patient department of the hospital.

An attempt to add bread and butter to the milk diet had been entirely unsuccessful. On admission she already presented the changes of rickets. The thorax was laterally compressed, with prominent sternum and marked beading of the ribs. Harrison's sulcus was well defined. The anterior fontanelle was unduly large for the age of the child, the epiphysis of the long bones everywhere enlarged. The abdomen was full, some tympanites present, and both liver and spleen enlarged. No teeth were present. The stools on admission were frequent, very offensive, green and slimy, but contained no blood. Although the symptoms speedily improved and with cessation of vomiting the stools began to assume a normal character, fourteen days after admission the child developed well-marked tetany. Facial irritability, carpopedal spasm and "obstetrician's hand" were all marked and Trousseau's sign was also present, and there was definite œdema of the dorsum of hands and feet. Laryngismus stridulus did not occur. The condition gradually passed off, and in the course of a fortnight had completely disappeared. Her weight was 13½ lb. Nothing was seen of the child until two years later, when at the age of 3½ she was again brought to hospital. Six months earlier she had had an attack of measles and with it diarrhoea. She improved for a time, but relapsed a month before coming to hospital, and during the last week was wasting and becoming rapidly worse. As many as twelve motions had been passed in the day, the stools being usually white, sometimes green. It was noted that the child appeared fairly well developed and moderately well nourished, that evidence of rickets were present, but there was no impairment of movement of limbs. Her teeth were good. She speedily improved, and on leaving hospital weighed 1 st. 6 lb. 8 oz.

Four years afterwards she was again brought to the hospital for swollen abdomen and looseness of the bowels. Her condition was at this time frankly diagnosed as "morbus cœliacus." The stools were pale, putty-like, soft and moulded and contained no visible bile, nor did the administration of ox-bile in capsules give rise to any change in their character. After ineffectual treatment during six weeks the patient was put on a fat-free diet on May the 8th, 1911. On May the 16th the motions, though still rather bulky and unformed, were of normal brown colour. On May the 23rd, the motions were formed, the child out of bed and doing well. She was now again put on an ordinary diet containing fats on June the 1st, and the stools reverted to their former type, and on June the 6th she was losing weight and was forced to return to bed. On June the 13th, though well enough to get up, she was still losing weight and was taking her food badly. On leaving hospital her weight was 2 st. 10 lb., whilst in hospital she had no diarrhoea, the number of stools averaging one *per diem*. A year later, the patient was again admitted for an attack of pain in the knees. Seven weeks before admission the knees became swollen and painful and the patient went off her legs. External splints were applied for the treatment of the genu valgum which was present, but the pain was aggravated by these and unrelieved by massage, and they were accordingly removed and the child put to bed. She was found to be bright and intelligent. The knees were bent and could not be extended, although easily and fully flexed; there was some peri-articular thickening both of knees and ankles, with limitation of movement at the ankle also. A skiagram of the knees showed increased translucency of the epiphyses and some irregularity of structure, a condition that is occasionally associated in adults with alimentary toxæmia or infection. Her stools showed the same characteristics as formerly. Several carious teeth

belonging to the milk dentition were removed and the pain in the knees and swelling gradually subsided, but the patient could not be induced to walk. Six months later she developed, without obvious cause, an attack of tetany with facial irritability and carpopedal contraction.

She was last seen in July, 1913, and could then walk with difficulty.

CASE 9.—Male, aged 11 years 5 months. He first came under observation when aged 5 years 8 months, in April, 1907. He was quite healthy until 1905, when he began to have diarrhœa. The motions were pale yellow in colour, sometimes resembling dirty water, and always foul-smelling. Wasting had become marked and the abdomen was constantly swollen. When admitted to hospital he appeared fairly well nourished and of healthy complexion. The abdomen was distended and flabby, easy to palpate and not tender. No peristalsis was seen. The stools were formed but pale, and frequently passed in bed owing to a degree of incontinence. Diarrhœa recurred in December, 1907, with very marked distension of the colon, and again in 1913. At this time the abdomen was greatly distended and visible peristalsis of the colon present. The stools were absolutely colourless, one *per diem*. There was no trace of (fatty acids) jaundice, and microscopical examination of the stools showed the presence of fatty acids, fats and soap. The stool was exceedingly frothy owing to the presence of gas bubbles throughout. In April, 1907, the child's weight was 1 st. 12 lb. 8 oz., and had increased by May to 2 st. 1 lb. 14 oz. On January the 14th, 1908, 2 st. 5 lb. 8 oz. In March, 1913, the weight was 3 st. 7 lb.

This concludes the clinical cases that we have brought forward, although there are several more under our observation of the same character which would only repeat the story. We wish now to emphasise once more that we have endeavoured to describe a group of cases of recurrent diarrhœa in childhood, which frequently seems to date its first onset from an attack of acute diarrhœa that, clinically, may resemble the acute enteritis so often met with in the summer.

Later, however, those characters have arisen which our examples have illustrated. To everyone it will occur that we are again describing a condition well recognised since the writings of Dr. Gee as that of cœliac disease, and this is the first point upon which we wish to dwell. To us it has seemed that "the cœliac disease," using the term in its usual sense, may very possibly be a phenomenon which, for the want of a better term, we would say is grafted upon the original illness. When some of these cases of ours were seen in the early stage they did not show the well-known characteristics, and several of them during the course of their long illnesses have passed green or blood-stained or brown fluid motions. Others, again, we admit, had from the first or nearly so passed motions of the character described in the cœliac affections, and there are others that do so from beginning to end of the illnesses. Our point is this, Does the cœliac affection represent a disease in itself, or is it the expression of some peculiar intestinal or other fault which may complicate various abdominal affections or be the result of some particular lesion that may arise in connection with various abdominal affections? Or

is it in part a result of an unsuitable diet in a disease which itself still persists although these special symptoms may disappear when the diet is corrected? Or, again, is it—following the line of thought suggested by Herter—the result of some peculiar bacterial flora acting upon disordered alimentary contents? There have been important writings upon cœliac disease which have approached the problem of its nature from different standpoints. Thus, Dr. Gee in bold outline sketched the salient features. Dr. Gibbons laid stress on the wide-spread derangement of function of the intestinal glands. Dr. Cheadle, impressed by the lack of colour and excess of fat in the stools, the abruptness of onset in some of the cases, together with the absence of jaundice, laid much stress upon the impaired function of the liver. Dr. Herter turned to the bacteriological problem and insisted upon the preponderance of a Gram-positive intestinal flora, which he associated peculiarly with the condition. Dr. Hutchison has emphasised the important bearing of diet.

We have been led to the same problem from yet another path by the study of this group of cases of recurrent diarrhœa in which we find ourselves coming upon phases in which we are unable to escape from the conclusion that we have arrived at the same goal as the writers we have mentioned.

The chief importance of our own contribution appears to us to lie in the results of the examination of the fatal case. The extensive lesions that were found are from every point of view of interest. We naturally ask ourselves whether, following our own line of thought, it is possible to find in them two distinct processes? Can we see some lesions which are the evidences of the recurrent and persistent diarrhœa, and others which bring about the cœliac symptoms? Are, for example, the chronic intestinal lesions the result of some particular infection—that of the bacillus of dysentery, for example (we must not, however, with the evidence at our disposal, do more than make the suggestion to illustrate our point)? On the other hand, are the changes in the liver a partial explanation of the cœliac symptoms? It is difficult, we imagine, to state how rapidly the extreme damage to the liver occurred in our fatal case, and quite possible that such changes are only evidence of a secondary toxæmia. On the other hand, we would point out that enlargement of the liver was repeatedly noticed in this case long before death, although it became more evident at the end. It does not, then, seem impossible that without necessarily any notable enlargement, there may be in these cases some peculiar poison damaging the hepatic function in some special way, but not causing any jaundice. Although acholia is now known

to be a term that is too committal, may not the condition of the liver nevertheless take a decided part in producing the cœliac symptoms?

The condition of the pancreas was, we must admit, somewhat a surprise. We had thought to have seen more extensive disease, but that there was some interlobular pancreatitis is a fact which is worth mentioning. It would be a mistake to lay overmuch stress upon a single record such as this one, but there is clear evidence in the histories of the recorded cases that peculiar poisons are present in these illnesses, producing such symptoms as tetany, anasarca,* neuritic pains and arthritic changes. They are sufficient, we feel, to make it justifiable to suggest that we have two factors to consider—the possible occurrence of a peculiar infection, and the appearance of special symptoms of the cœliac affection as a sequel, but not necessarily as a constant occurrence.

The standpoint we have taken has led us to adopt the title to our contribution that we have done, because we wish to ascertain whether the general opinion is that we are yet in a position to consider the cœliac affection as in itself a disease. If there is unanimity upon this, then we think the original term “cœliac disease” the safest as being the least committal. Later researches have shown that the colour of stercobilin may be masked by fat and bile, but is not necessarily absent from the white fæces, and on this account acholia pledges us too far, although, as we have mentioned, this term directs attention to the possible influence of disordered hepatic function.

Malabsorption is clearly a predominant feature in these illnesses, and we need not delay over the infantilism or extreme weakness of the lower extremities, or flatulent distension and general flabbiness and anæmia, for we think this is a sufficient explanation. It is an interesting point that a considerable number of cases after reaching the age of five to seven seem in a mysterious way to outgrow the tendency to recurrent attacks, and to gain step by step a tolerance to a more generous diet; and one wonders in such cases to what extent the bowels remain permanently damaged, and whether the liver or pancreas or both acquire in some way a greater vitality, and thus aid in overcoming the cœliac element.

The problem of the *diet* seems to us a very difficult one, for a study of our cases and of others we have not recorded seems to point to any of the chief articles of diet as being at one time or

* A recent fatal case which it is hoped to publish in brief at an early date confirmed the occurrence of definite ascites, non-tubercular in nature, in this condition.
—F. J. P.

another harmful, although we think Herter inclines to the carbohydrates as the first offenders. Fat seems to us to stand first as the most difficult, yet some cases may take cream. Carbohydrates may be tolerated better than any foods at times when the condition is almost desperate, but often they are ill-borne, and if pressed appear to assist in causing distension in which the entire bowel is implicated. Broths and meat-juices are, perhaps, as likely to be dealt with successfully as any food, but with milk the most diverse results occur. In some cases milk seems most injurious, in others it has been the great stand-by. The dried milks have often been of service. Eggs are frequently disastrous, and again fish has been most unsatisfactory, and minced meat equally so. The malted foods are very likely to produce diarrhœa. The wide-spread intestinal lesions prepare us to find that all forms of food may be difficult to assimilate. With us, in fact, it has been that in some cases a diet has been arrived at by bitter experience with the particular individual, and has been evolved quite empirically. We would add that diarrhœa is by no means an invariable symptom, for there may be also constipation, which may prove equally dangerous from consequent meteorism. Of all drugs, the one that seems to us after a prolonged experience to be the most generally successful is bismuth. We have had the most convincing proof of this in the fact that several mothers of much intelligence and unsparing in care of their children have come back asking for this when a relapse was threatening.

We do not pretend that it will cope with the worst cases, but it is, we believe, of the greatest value in the milder ones, although it is powerless to combat an unsuitable diet. Opium and grey powder have, as is well recognised, their times of value. And when the stage of convalescence is well established mild iron preparations are useful. The routine use of cod-liver oil and malt in the stages of remission may, in our opinion, precipitate an attack.

The remarkable tendency to great abdominal distension and the diagnosis in some of these cases of dilated colon raise the interesting question as to whether a condition allied to Hirschsprung's disease, or, indeed, whether some cases actually described as of this nature, are not to be ascribed to this peculiarly severe and chronic affection damaging the neuro-muscular elements of the bowel. The course of events we would picture, then, is that the active disease has quieted down, leaving a much weakened gut, and constipation has resulted. This constipation has been neglected or permitted at first as a lesser evil and thus added to the strain upon the weakened

bowel, with the result that an extreme degree of atony of some of the most affected part has resulted. The following history is a suggestive one in this connection :

L. W—, a boy, aged 6 years 4 months, had always been inclined to be constipated, but when 3½ years old had a prolonged attack of diarrhoea, passing slime and blood, after which the constipation became much more severe. Now the bowels are frequently not moved for a week, and even for three weeks or nearly a month. When constipated the abdomen gets very distended. The transverse colon is clearly enlarged, and the upper segment of the abdomen has the appearance of fulness which is not uncommon in Hirschsprung's affection. The report upon the bismuth meal confidently stated that the condition was characteristic of Hirschsprung's affection. Under persistent treatment large, hard masses of feces are being passed, but it is too early to say what permanent improvement is going to result.*

The *diagnosis* from abdominal tuberculosis is not easy, and it is one of the valuable results of the examination of the fatal case that it proved conclusively that a condition at first considered more than once to be of a tubercular nature was undoubtedly non-tubercular. This particular point strikes us that the rapidity with which in this affection extreme illness is reached and the possibility of recovery from such an extreme condition on more than one occasion makes a clinical picture unlike that of abdominal tuberculosis. The absence of tubercular masses in the abdomen is also another fact of importance. *The occurrence in a few cases of general anasarca with ascites is very remarkable.* The fatal case also warns us against becoming stereotyped in our use of such terms in childhood as gastritis, gastroenteritis and colitis, for there was evidence here of an affection of the entire alimentary tract beyond the œsophagus.

Lastly, with regard to the bacteriology, it is clear that at present the results have been too diverse for us to see our way at all plainly although the accurate investigations recorded are suggestive. To us the peculiar recurrent alimentary disturbance suggests an infective origin, but the acholia may very possibly be the result of none bacterial processes grafted upon the bacterial infection. The valuable investigations of Herter upon this point are of much interest, but at present we incline to the view that the coeliac element was not in our cases to be looked upon as the essential element in the illnesses, and we should state as further evidence in support of this that coeliac symptoms may develop abruptly in the course of a night after a

* After prolonged and most careful medical treatment the condition failed to mend to any degree, and in February of this year Sir W. A. Lane resected the bowel between the lower end of the ileum and pelvic colon. The operation was well borne, but as yet the ultimate result cannot be stated, and the wall of the large bowel has not yet been investigated.—F. J. P.

sudden chill (a point commented upon by the late Dr. Cheadle), without evidence at any time of such a form of diarrhœa as was met with in the cases related here.

Finally, we would emphasise that this contribution has been brought forward with the desire to learn both from the clinical and pathological side any facts that may assist us to deal with these exceedingly difficult cases more satisfactorily and understand their interpretation more clearly.

APPENDIX.—DIET.

A specimen of a full diet for a child aged 3 years with morbus coeliacus, upon which a gain of weight was obtained in Hospital:

Breakfast at 5 a.m.: Bread, 2 oz.; butter, 3 dr.; fat bacon, $\frac{1}{2}$ oz.; milk, 7 oz. Fat-free diet; Bread and jam, 2 oz.; weak tea with 2 lumps of sugar, 7 oz.

Lunch at 9 a.m.: Bread, 1 oz.; butter, 3 dr.; milk, 5 oz. Fat-free diet: Biscuits with jam, 2 oz.; lemonade, 7 oz.

Dinner at 12 noon: Mince, 4 oz.; pudding, 4 oz.; milk, 5 oz. Fat-free diet: Fish or mince with potato, 6 oz.; bread and jam, 2 oz.

Tea at 3.30 p.m.: Bread, 2 oz.; butter, 3 dr.; milk, 7 oz. Fat-free diet: Bread and jam, 2 oz.; weak tea, 7 oz.

Supper at 6 p.m.: Bread, 1 oz.; butter, 3 dr.; milk, 5 oz. Fat-free diet: Bread and jam, 2 oz.; lemonade, 7 oz.

One drink of milk at night of 7 oz.

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THE FOOD VALUE REQUIRED BY GROWING GIRLS,
AGED FOUR TO FIFTEEN. RESULT OF INVESTIGA-
TIONS CARRIED ON FOR SEVENTEEN YEARS,
WITH ANALYSES AND COMMENTS.

By J. GORDON SHARP, M.D.Edin.

IN the investigations about to be detailed the writer has had the opportunity of observing the results of feeding for over seventeen years a large number of girls of the neglected classes in an institution capable of housing thirty inmates. The dietary was constructed for the needs of the girls, or in other words, food was given in such quantity and of such quality as were likely not only to increase weight, but also to maintain health and vigour. When these ends were attained the results were noted. For various reasons economy was studied, but parsimony was not encouraged. The only guide and rule followed were that the children were to have enough to eat of suitable food.

Character of the children.—In almost all the instances the children had suffered want and neglect before they came under observation. Many of them had bad family histories in every sense of the word.

Surroundings.—When once admitted to the institution they were placed under hygienic conditions, and they were plentifully supplied with fresh air and appropriate clothing for cold and warm weather respectively. Hours of sleep were carefully attended to. Children were admitted from four years of age up to twelve or thirteen, but the admission of the children at the latter age was not encouraged because of the shortness of the training, for after the age of fifteen was reached the children were sent out to service, or they were sent to Canada to remove them as far as possible from old sources of contamination. They remained at school in the institution till the age of thirteen when they did work in the kitchen or laundry till the time of leaving. Exercise in the open air was regularly taken, wet or fine.

Each child was examined on admission, weighed, and the height noted, and at regular stated intervals the weight and height were taken during the entire period of stay in the institution. Most cases were admitted at the ages of seven and nine.

Health.—In all the seventeen years, only two deaths took place amongst the many children who had moved out and in during these years. One death was due to acute septicæmia and the other to acute appendicitis. Cases of chronic ill-health are unknown. Several epidemics of mild diphtheria, influenza and catarrhal colds occur, but

practically nothing else, except during the first few years in which the observations were carried on, when many cases of chilblains occurred every winter. Some of these were severe, ulcers forming and pieces of soft tissue even necrosing in one or two cases. For ten years no such case has been seen, and for the same period of time no child has been incapacitated from school or work, except from acute disease. The cause and prevention of this condition is discussed in another place and need not be further mentioned here.

One important point remains to be mentioned: progressive rickets is never seen. A child may be admitted with a tendency to this condition, but in a short time it disappears.

Gross Week's Food Supply for Thirty Girls, aged 4 to 15 years.

- (1) Twenty-one pounds (9·520 kgm.) meat free from bone.
- (2) Nine pounds (4·082 kgm.) fish, chiefly cod or hake.
- (3) One hundred and forty-four pounds (65·310 kgm.) of white flour.
- (4) Forty-nine pounds (22·226 kgm.) of potatoes.
- (5) Fourteen pounds (6·350 kgm.) margarine.
- (6) Four pounds (1·814 kgm.) rice, sago or tapioca.
- (7) Two pounds (0·907 kgm.) raisins or currants.
- (8) Fifteen pounds (6·804 kgm.) sugar.
- (9) Six pounds (2·722 kgm.) *each* of pearl barley, peas and beans.
- (10) Forty-nine pounds (22·226 kgm.) of a mixture of cabbage, carrots, cauliflowers.
- (11) Half a pound (0·277 kgm.) tea.
- (12) Three pounds (1·361 kgm.) cocoa.
- (13) One hundred and five pints, equal to 131 pounds or 59·421 kgm. of new milk.
- (14) Eight pounds (3·629 kgm.) jam or syrup.
- (15) Six pounds (2·722 kgm.) oatmeal.
- (16) Four pounds (1·814 kgm.) liver.
- (17) One pound (0·454) bacon.
- (18) Two pounds (0·908 kgm.) suet.

These quantities may be increased on occasions by fruit grown in the garden, or by gifts from friends in the shape of jam, cream, fruit and so on. The list, too is varied from time to time to obviate monotony, but the food value is never allowed to get lower than as stated later on. In cold weather a little extra fat is thrown in, and in hot weather the fat and animal protein are lessened and the carbohydrate is increased, as is done in every well-regulated dietary.

Calculations made from the food list show that the daily average intake for each child is: *Protein*, 56 grm.; *fat*, 51 grm.; *carbohydrate*, 259 grm., or calories 1817 or nitrogen 8.90 grm., carbon 168 grm., or 1 nitrogen to 18.8 carbon.

In view of recent pronouncements, it will be observed that the protein is comparatively large, but it is felt that not a gramme too much has been given. The fat content too, is, comparatively large. The carbohydrate is comparatively small in amount, but it is evidently sufficient, as will be seen from the results of the weighings.

Nine months' experience with standard flour instead of ordinary flour.—During the time when the use of standard flour (80 per cent.) was so much advocated as a feeding stuff, the writer was asked if it might be substituted instead of the ordinary white flour, which had been in use for fifteen years. It was tried for nine months, the writer having no hand or interest in the experiment. The children were weighed and observed, but no difference was noted in either weight or health, and the use of the standard flour was gradually dropped by those who had urged its adoption. The employment of standard flour lowered the caloric value of each child's daily food content by about 70 calories, so that what was gained in lecithin or other organic phosphorus constituent was lost in actual feeding properties. There was really no gain at all, since there was never any reason to believe that the organic phosphorus content was other than what was equal to the maintenance of health and vigour.

HOW THE FOOD STUFFS ARE PREPARED—DIETARY FOR THE WEEK.

Sunday.

Breakfast.—All children under nine have porridge and milk with bread and syrup or jam. Children over nine have cocoa or tea with plenty of milk, bread, margarine, syrup or jam.

Dinner.—Same for all—beef-pie, potatoes, vegetables and milk pudding—rice, sago or tapioca—and fruit in season.

Tea.—Same for all. Cocoa or tea with plenty of milk, bread, butter, margarine, jam.

If the elder girls have to be up late they are allowed bread and cocoa. On Sunday, the protein intake as well as the fat and carbohydrate are comparatively large.

Monday.

Breakfast.—As on Sunday.

Dinner.—Barley soup made from good stock and containing

plenty of vegetables, with suet pudding containing currants or raisins, with potatoes.

Tea.—Really cocoa of a good quality. Plenty of bread with margarine, syrup or jam.

The nitrogen intake is small on this day (only about 6 grm.) while the carbon is large.

Tuesday.

Breakfast.—Porridge and milk with bread and syrup.

Dinner.—Meat stew, vegetables, potatoes and milk pudding.

Tea.—Cocoa, as on Monday.

Protein intake nearly equal to average (8 grm.), fat intake much above average.

Wednesday.

Breakfast.—Same as Sunday.

Dinner.—Pea soup, made from rich stock and containing a variety of vegetables with suet pudding containing currants or raisins, and potatoes.

Tea.—Same as Monday.

Protein intake below average, fat also below, carbohydrate much above.

Thursday.

Breakfast.—Same as Tuesday.

Dinner.—Liver and bacon with potatoes, vegetables, and rice or sago milk pudding.

Tea.—Same as Tuesday.

Protein intake average, fat above, carbohydrate average.

Friday.

Breakfast.—Same as Sunday.

Dinner.—Fish (cod or hake), potatoes, vegetables, dumplings served with syrup or jam.

Tea.—Same as Monday.

The dietary of this day contains the smallest protein, fat and carbohydrate content, and in consequence the smallest number of calories of all the week.

Saturday.

Breakfast.—Same as Tuesday.

Dinner.—Bean soup with vegetables, potatoes and suet puddings, with bread and syrup or jam if desired.

Tea.—Same as Tuesday.

The protein is small in amount, the fat equal to the average, and the carbohydrate high, making a large total of calories.

One of the objects of the dietary was to vary the intakes of protein, fat, and carbohydrates. Whenever meat was not given vegetable protein was substituted. This was greatly relished by the children, and the bean or pea soup dinner day is always a favourite day. In summer the meat is cut down and an equivalent of eggs given. A large quantity of fresh fruit and vegetables (grown in the garden) are consumed. This makes the cost of feeding much smaller.

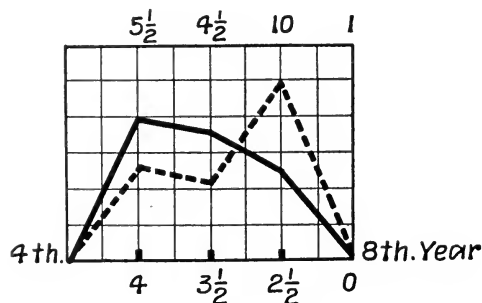
Margarine is used instead of butter and its cheapness is an advantage. No child is to have less than one ounce daily; the actual amount is 30.23 grm.—rather more than an ounce. The bread is home-baked, compressed fresh yeast being employed. This probably has a salutary effect on the health of the children.

Average weekly cost of feeding each child.—This is found to be two shillings and sixpence (up to 1911) exclusive of vegetables and fruit, otherwise than those given in the average weekly list of food-stuffs.

Proof of the adequacy of the food.—In the series of tables, the weight and height of the child are shown when she came into the Home, and then for a series of years till she left, the records of weight and height always being taken at the same time of the year, and, in fact, as near as possible under similar conditions in every way. As will be observed, in almost every case in which the child was equal to the averages or above the averages these were maintained as long as the girl remained in the Home, showing that the food was in every way adequate. But one may claim more than this for the dietary, for children who came in below the averages often left with records equal to or above the averages.

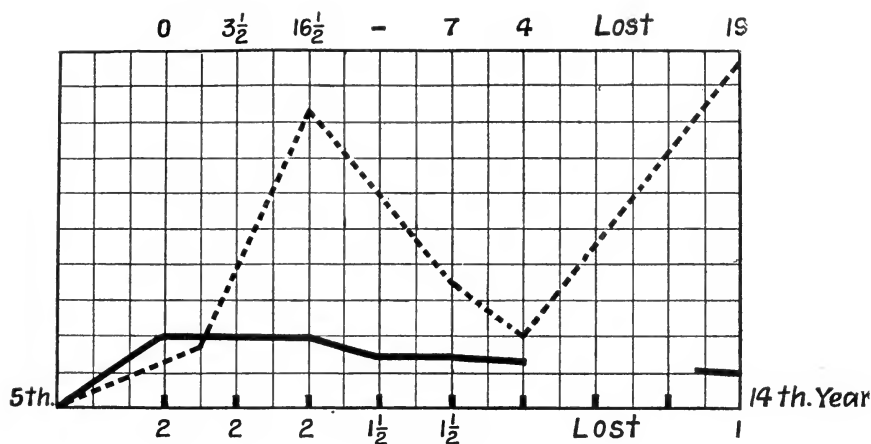
(Quetelet's averages are here accepted.)

Girl A.—Observation from 4 to 8 years of age.



Weight.					Height.		
Above average on admission.					Above average on admission.		
	st.	lb.	kgm.		ft.	in.	mm.
Age 4	2	6	15.42	.	3	1	940
" 5	2	11½	17.75	.	3	5	1040
" 6	3	1	19.52	.	3	8½	1130
" 7	3	11	24.04	.	3	11	1194
" 8	3	12	24.50	.	3	11	1194
Above average on leaving.					Also above average on leaving.		

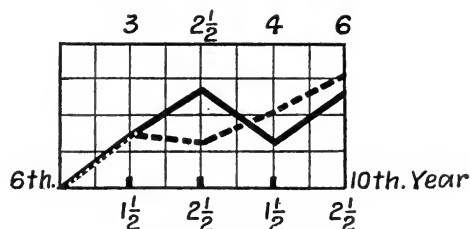
Girl B.—Observation from 5 to 14 years of age.



Above average on admission.					Above average on admission.		
	st.	lb.	kgm.		ft.	in.	mm.
Age 5	2	11½	17.91	.	3	3½	1003
" 6	2	10	17.23	.	3	5½	1059
" 7	2	13½	18.80	.	3	7	1092
" 8	3	2	19.97	.	3	9	1143
" 9	3	9	23.14	.	3	10½	1181
" 10	3	13	24.95	.	4	1	1244
" 11	Lost		Lost	.	Lost	Lost	Lost
" 12				.			
" 13	4	7	28.57	.	4	5	1345
" 14	5	12	37.20	.	4	6	1372
Above average on leaving.					Below average (4 inches).		

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Girl C.—Observation from 6 to 10 years of age.



Below average on admission.

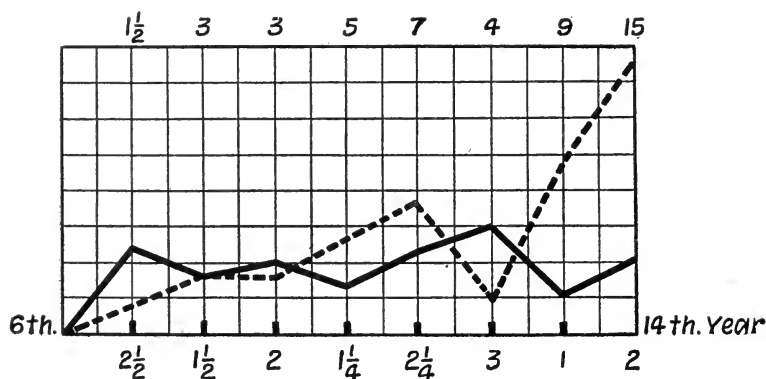
Above average on admission.

	st.	lb.	kgm.	ft.	in.	mm.
Age 6	2	4½	14·74	3	6	1066
„ 7	2	7½	16·11	3	7½	1104
„ 8	2	10	17·25	3	10	1168
„ 9	3	0	18·85	3	11½	1207
„ 10	3	6	21·33	4	2	1269

Below—2 lb. below as against 3½
on admission.

Above average on leaving.

Girl D.—Observation from 6 to 14 years of age.



Equal to average on admission.

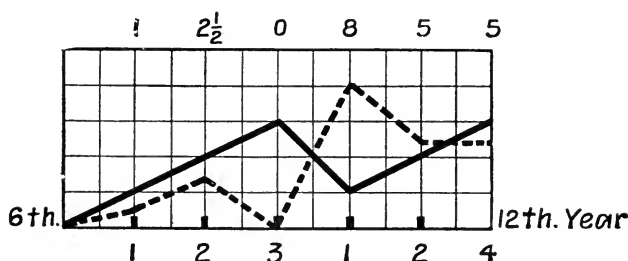
Below average on admission.

	st.	lb.	kgm.	ft.	in.	mm.
Age 6	2	8½	16·55	3	1½	953
„ 7	2	10	17·24	3	4	1016
„ 8	2	13	18·59	3	5½	1059
„ 9	3	2	19·97	3	7½	1104
„ 10	3	7	22·10	3	8¾	1130
„ 11	4	0	24·95	3	11	1194
„ 12	4	4	27·22	4	2	1269
„ 13	4	13	31·30	4	3	1295
„ 14	6	0	37·08	4	5	1346

Above average on leaving.

Below average on leaving.

Girl E.—Observation from 6 to 12 years of age.



Equal to average on admission.

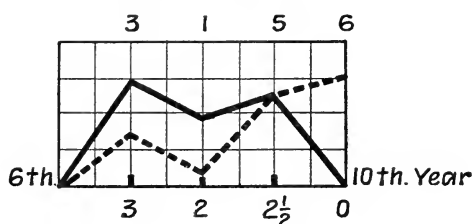
One inch above average on admission.

Age	6	7	8	9	10	11	12
st.	2	2	2	2	3	3	4
lb.	7½	8½	11	11	5	10	1
kgrm.	16.11	16.78	17.69	17.69	21.33	23.59	25.42
ft.	3	3	3	3	3	4	4
in.	5	6	8	10	11	1	5
mm.	1042	1066	1117	1165	1194	1244	1346

Six pounds above average on leaving.

One inch above on leaving.

Girl F.—Observation from 6 to 10 years of age.



Equal to average on admission.

Half inch below on admission.

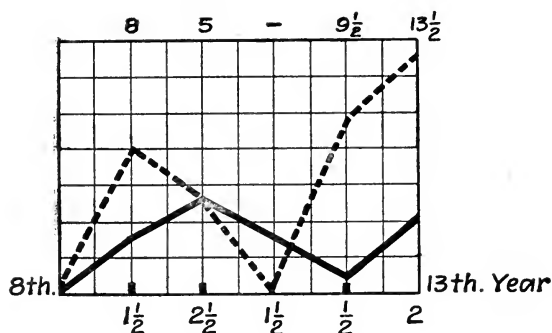
Age	6	7	8	9	10
st.	2	2	2	3	3
lb.	8	11	12	3	9
kgrm.	16.33	17.69	18.14	20.41	23.14
ft.	3	3	3	3	3
in.	3½	6½	8½	11	11
mm.	1003	1092	1130	1194	1194

One pound above on leaving.

Two inches below on leaving.

210 FOOD VALUE REQUIRED BY GROWING GIRLS.

Girl G.—Observation from 8 to 13 years of age.

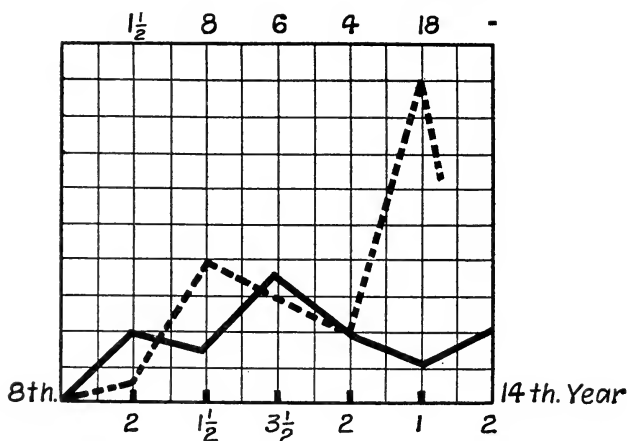


One pound below on admission. Equal to average on admission.

Age	st.	lb.	kgm.	ft.	in.	mm.
8	2	12	18.14	3	9	1143
9	3	6	21.73	3	10 1/2	1180
10	3	11	24.04	4	1	1244
11	3	10	23.59	4	2 1/2	1282
12	4	5 1/2	27.89	4	3	1292
13	5	5	33.03	4	5	1346

Four pounds above on leaving. Two inches below on leaving.

Girl H.—Observation from 8 to 14 years of age.



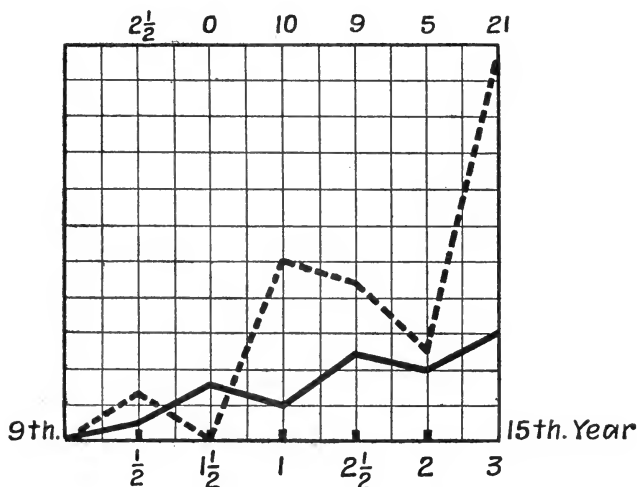
Equal to average on admission. Two inches below on admission.

Age	st.	lb.	kgm.	ft.	in.	mm.
8	2	11 1/2	17.75	3	7	1092
9	2	13	18.59	3	9	1143
10	3	7	22.10	3	10 1/2	1180
11	3	13	24.95	4	2	1269

		st.	lb.		kgrm.		ft.	in.		mm.
Age 12	.	4	3	.	26·77	.	4	4	.	1308
„ 13	.	5	7	.	34·92	.	4	5	.	1346
„ 14	.	5	6	.	34·48	.	4	7	.	1397

Three pounds below on leaving. Three inches below on leaving.

Girl I.—Observation from 9 to 15 years of age.



One and a half pounds above on admission.

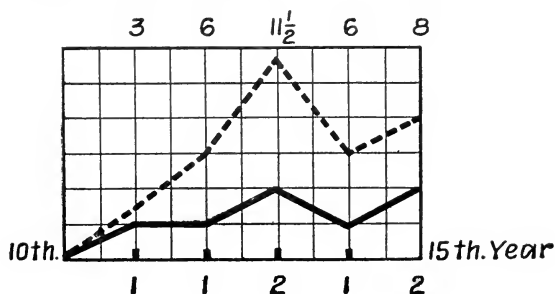
Equal on admission.

			st.	lb.		kgrm.		ft.	in.		mm.
Age	9	.	3	5½	.	21·55	.	3	11½	.	1207
„	10	.	3	8	.	22·46	.	4	0	.	1218
„	11	.	3	8	.	22·46	.	4	1½	.	1236
„	12	.	4	4	.	27·22	.	4	2½	.	1282
„	13	.	4	13	.	31·30	.	4	5	.	1346
„	14	.	5	4	.	32·58	.	4	7	.	1397
„	15	.	6	11	.	43·08	.	4	10	.	1473

Seven pounds above on leaving.

Equal on leaving.

Girl J.—Observation from 10 to 15 years of age.



212 FOOD VALUE REQUIRED BY GROWING GIRLS.

Six and a half pounds below on admission.

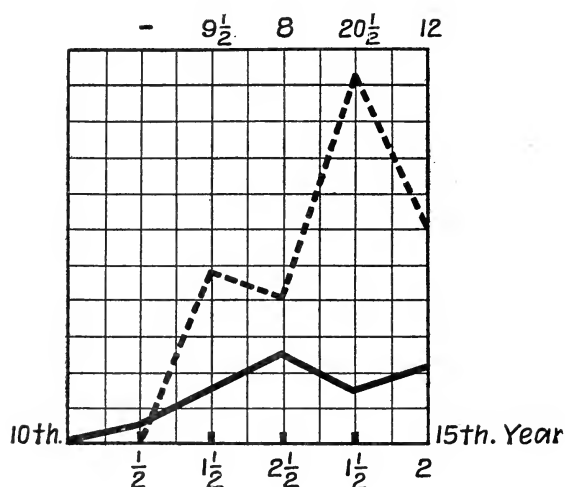
Four inches below on admission.

	st.	lb.	kgm.		ft.	in.	mm.
Age 10	3	1½	19·74	.	3	9	1143
„ 11	3	4½	21·10	.	3	10	1168
„ 12	3	10½	23·81	.	3	11	1194
„ 13	3	12	24·50	.	4	1	1244
„ 14	4	4	27·22	.	4	2	1269
„ 15	4	12	30·85	.	4	4	1308

Twenty pounds below on leaving.

Six inches below on leaving.

Girl K.—Observation from 10 to 15 years of age.



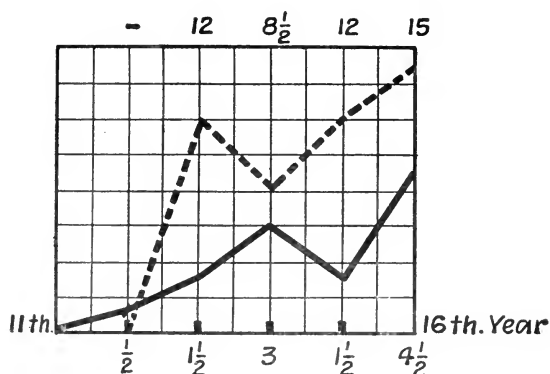
Twelve and a half pounds above on admission.

Four inches above on admission.

	st.	lb.	kgm.		ft.	in.	mm.
Age 10	4	6½	28·57	.	4	5	1346
„ 11	4	6	28·12	.	4	5½	1352
„ 12	5	1½	32·44	.	4	7	1397
„ 13	5	9½	36·05	.	4	9½	1461
„ 14	7	2	45·36	.	4	11	1499
„ 15	8	0	50·80	.	5	0	1524

Twenty-four pounds above on leaving. Two inches above on leaving.

Girl L.—Observation from 11 to 16 years of age.



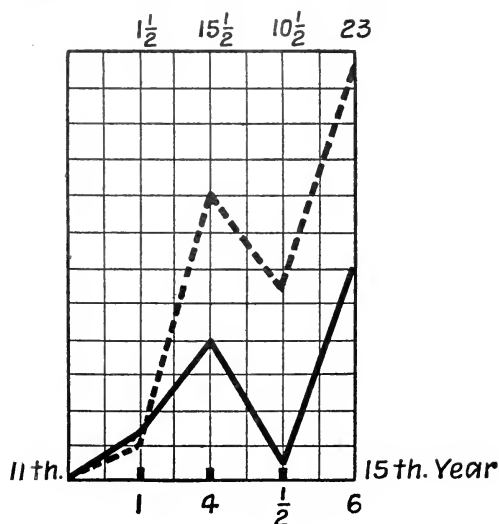
Three and a half pounds below on admission.

Equal to average on admission.

Age	st. lb.		kgm.	ft. in. mm.		
11	3	10 1/2	23.81	4	2	1269
12	3	8 1/2	22.68	4	2 1/2	1282
13	4	6 1/2	28.34	4	4	1308
14	5	1	32.21	4	7	1397
15	5	13	37.65	4	8 1/2	1423
16	7	0	44.45	5	1	1549

Three pounds above on leaving. Two inches above on leaving.

Girl M.—Observation from 11 to 15 years of age.



Three and a half pounds below on
admission.

	st.	lb.	kgm.
Age 11	3	10½	23·81
„ 12	3	12	24·50
„ 13	4	13½	31·52
„ 14	5	9	35·83
„ 15	7	4	46·27

Five inches below on
admission.

ft.	in.	mm.
3	9	1143
3	10	1168
4	4	1269
4	2½	1282
4	8½	1423

Fourteen pounds above on
leaving.

One and a half inches below
on leaving.

In order to make the matter clearer I have charted each child's annual variations in height and weight while under observation, all being drawn to scale.

The Charts show the yearly increase in stature and in weight.

The divisions of the base-line represent years. The dotted line and the top row of figures refer to pounds. One pound = nearly $\frac{1}{5}$ kilogram. The continuous line and the bottom row of figures refer to inches. One inch nearly = 25 millimetres.

(To be continued.)

CONGENITAL FAMILIAL CHOLÆMIA WITHOUT SPLENOMEGALY.

By GORDON R. WARD, M.D.

THE patient, K. S—, aged 15 years, was under the care of Dr. Young, of Boxmoor, and when seen by the writer was said by her mother to be “delicate,” but was at work as a brush-maker, and complained of no disability. She was well formed and nourished. Her previous history showed that she had been yellow at or shortly after birth, apparently from icterus neonatorum, and had suffered from “convulsions” from the age of three weeks for three months. She had been more yellow than she was at the time of examination, and had occasionally suffered from pain in the right side. Otherwise nothing of note. Several medical men had seen her, according to her story, and had noted that she was yellow. Dr. Young had examined her urine on more than one occasion, but found nothing abnormal.

On examination it was noted that her sclerotics were distinctly yellow, while her skin was of a dusky yellowish-brown colour, not definitely pigmented, nor yet of the lighter yellow, almost primrose, colour usual in these cases. She tolerated abdominal palpation much more readily than many patients, but neither liver or spleen was palpable, nor did percussion show any enlargement of either organ.

Her mother and her maternal uncle were also examined, and both showed massive splenomegaly and anæmia. The blood conditions of the three were as follows :

	Patient.	Uncle, aged 42 years.	Mother, aged 34 years.
Red cells . . .	4,285,000 . . .	2,222,500 . . .	1,755,000.
Hæmoglobin . . .	79 per cent. . .	52 per cent. . .	38 per cent.
Colour index . . .	0·929 . . .	1·181 . . .	1·085
Nucleated red cells .	Two seen . . .	None seen . . .	872 per c.mm.
Saline hæmolysis—			
Commencing . . .	0·5 per cent. . .	0·6 per cent. . .	0·55 per cent.
Complete . . .	0·5 per cent. . .	0·5 per cent. . .	0·5 per cent.
Polychromasia . . .	Very marked . . .	Very marked . . .	Very marked.
Anisocytosis . . .	Much increased . . .	Much increased . . .	Very much increased.
White cells . . .	14,800 . . .	7900 . . .	7928
Polymorphs . . .	71·4 per cent. . .	77·8 per cent. . .	57·0 per cent.
Eosinophiles . . .	1·8 per cent. . .	1·8 per cent. . .	1·2 per cent.
Mast-cells . . .	0·2 per cent. . .	0·8 per cent. . .	0·2 per cent.
Transitionals . . .	2·8 per cent. . .	3·2 per cent. . .	3·0 per cent.
Small mononuclears .	23·0 per cent. . .	15·6 per cent. . .	35·6 per cent.
Large mononuclears .	0·8 per cent. . .	0·8 per cent. . .	1·6 per cent.
Myelocytes . . .	None seen . . .	None seen . . .	1·4 per cent.

These blood examinations are typical of cholæmia, and the physical examinations of the patients left no doubt as to the diagnosis.

It is of interest that the mother did not think that her daughter suffered from the same disease as herself, and was with difficulty persuaded to bring her for examination. I was unable to examine any other members of the family, although I saw the grandmother, who was not jaundiced. She stated that she had no knowledge of the disease in her family, except in her son and daughter.

The patient had six brothers and sisters ; generally speaking, cholæmia families, like chlorosis families, are large. Of the six a few facts were available :

No. 1, female, the eldest, died of pneumonia, aged three months ; No. 2, the patient, aged 15 years ; No. 3, female, aged 13 years, never yellow nor ill ; No. 4, male, died, aged 13 days, cause of death unknown ; No. 5, female, aged 5 years, never yellow nor ill ; No. 6, male, died, aged three hours ; No. 7, female, aged 2 years, never yellow nor ill.

Although cholæmia without splenomegaly is not unknown, it has some interest both from the point of view of treatment and theoretically. Splenectomy is becoming well recognised as a method of treatment. Suppose this patient should later on develop severe anæmia or frequent pain, would it be justifiable to remove the spleen, although it were not normal in size ? Again, the success of splenectomy is often quoted as proof that the primary fault resides in the spleen.

Such cases as the subject of this paper throw doubts on this view even if there were no better reasons for doubting its accuracy.

The diagnosis was very interesting, or, rather, might have been very interesting and difficult. The patient knew nothing of her family history, and her mother attached little importance to it. Had the patient been seen apart from her mother only a blood examination could have suggested the proper diagnosis. As she was not particularly anæmic it is extremely probable that no examination would have been made.

I am indebted to Dr. Young for the trouble he took in bringing this family to my notice, and in persuading the daughter to come for examination.

Royal Society of Medicine.

CLINICAL SECTION.

Friday, February the 13th, 1914.

CASES IN WHICH SPLENECTOMY HAD BEEN PERFORMED, OR WAS CONTEMPLATED FOR DISEASE.

Splenic Anæmia in a Father and Three Children.—Dr. T. R. WHIPHAM.—CASE 1.—The father, aged 39 years, had had no illness since childhood until three years ago, when, simultaneously with the three children shown, he was suddenly attacked with high fever of a remittent character, the nature of which was not fully determined. All four recovered in a few days, but were noticed to be exceedingly anæmic. Since that time he had “never felt the same,” though he had not complained of any particular symptoms. In October, 1913, he had an attack of influenza, when he was found to have an enlarged spleen. Syphilis was denied, and the Wassermann reaction was negative. The patient was somewhat anæmic and had lost strength and weight recently. The spleen was considerably enlarged, and reached nearly to the middle line and to a little below the level of the umbilicus. The liver was of normal size, and there was no increase of the lymphatic glands.

BLOOD-COUNT.

	November the 17th.	December the 5th.	January the 15th.
Red cells	3,352,000	3,342,000	3,520,000 per c.mm.
White cells	12,600	12,500	8,800 „
Hæmoglobin	—	—	75.0 per cent.
Polymorphonuclears	75.0	71.4	46.0 „
Lymphocytes (small)	12.0	14.3	42.0 „
„ (large)	1.2	2.2	3.0 „
Eosinophiles	7.0	6.0	5.0 „
Myelocytes	5.0	3.3	1.0 „
Mast-cells	0.1	2.2	3.0 „

No normoblasts A few normoblasts.
No poikilocytes. Many megalocytes,
microcytes and
poikilocytes.

He had recently passed segments of a tapeworm and probably still harboured the head.

CASE 2.—Son of the above, aged 15 years. Patient had had chickenpox, measles and whooping-cough at the age of six, and diphtheria when aged nine. With the exception of the indeterminate illness three years ago he had not been ill since, though he had been noticed to be pale. He had never suffered from worms. The boy showed a moderate grade of anæmia; his spleen was firm and considerably increased in size, though it was not quite so large as that in Case 1. The liver and lymphatic glands were not enlarged.

CASE 3.—Daughter, aged 13 years. She had had chickenpox, measles and whooping-cough at the same time as her brother, and acute rheumatism four years ago, which left no cardiac lesion. Three years ago she had the illness already referred to. In December last she had a second attack of acute rheumatism, which was followed by pneumonia, and now had incompetence of the mitral valve. She had never had worms. She showed a marked degree of anæmia and was much paler than she was before her recent illness. The spleen was firm and enlarged to beyond the middle line and almost to the level of the umbilicus; it was now a little larger than it was two months ago. There was no enlargement of the liver or lymphatic glands.

BLOOD-COUNT.

	December the 5th.	February the 4th.
Red cells	2,210,000	1,536,000 per c.mm.
White cells	9,500	13,600 "
Hæmoglobin	—	35.0 per cent.
Polymorphonuclears .	68.0	64.5 "
Lymphocytes (small) .	15.0	14.0 "
" (large)	4.2	6.2 "
Eosinophiles	9.1	9.1 "
Myelocytes	2.0	3.0 "
Mast-cells	2.0	2.0 "
	No normoblasts.	No normoblasts.
	No poikilocytes.	

CASE 4.—Daughter, aged 9 years. She had had chickenpox and measles at the same time as the other children, and meningitis four years ago. She has also had two or three attacks of acute rheumatism and the heart showed evidence of a mitral lesion. Three years ago she had the same febrile illness as her father and elder brother and sister. There was no history of worms. She was distinctly anæmic and presented a moderate enlargement of the spleen, its size being about the same as that of Case 2. Like the other cases, she showed no hepatic or lymphatic hypertrophy.

BLOOD-COUNT.

	December the 5th.	February the 4th.
Red cells	2,320,000	2,024,000 per c.mm.
White cells	8,500	10,800 "
Hæmoglobin	—	2.0 per cent.
Polymorphonuclears .	73.5	66.0 "

	December the 5th.	February the 4th.
Lymphocytes (small) .	14.0 . .	14.0 per cent.
" (large) .	6.0 . .	9.0 "
Eosinophiles . .	6.0 . .	8.0 "
Myelocytes . .	— . .	1.0 "
Mast-cells . .	0.5 . .	1.0 "
	No normoblasts.	No normoblasts.
	No poikilocytes.	

In addition to the patients shown the family consisted of the mother and three other children; two girls, aged 11 and 6 years respectively, and a boy, aged 3 years, all of whom were healthy. None of these suffered from the febrile illness three years ago.

Case of Splenic Anæmia treated by Splenectomy.—Dr. HERBERT FRENCH and Mr. PHILIP TURNER.—A boy, aged 5 years, was admitted to Guy's Hospital on March the 31st, 1912, in a very weak, pale, drowsy condition; he was very anæmic and, at the same time, suffering from bronchitis. The spleen was found to be very enlarged, reaching across to the middle line and down to the iliac crest; the liver was moderately enlarged, smooth and soft. Several blood-counts were made, the following figures being about the average: White corpuscles, 21,000; red corpuscles, 1,900,000; hæmoglobin, 20 per cent. The diagnosis that was made was pseudo-leukæmia infantum of the von Jaksch's type. The Wassermann reaction was positive on several occasions, and the patient's sister was now affected by a precisely similar malady. Previous to his admission he had repeatedly been an in-patient in various hospitals, where he had received treatment by iron, arsenic, mercury, iodide of potassium, salvarsan injections, and the use of the X rays locally over the spleen, but all without any marked benefit. From 9 months to 5 years of age the patient had been a yellow, anæmic, frail little boy, unable to be long out of bed; his general appearance was that of a patient in an advanced stage of pernicious anæmia. As all other treatment had failed to bring about improvement in the condition, it was finally decided on September the 26th, 1912, to excise the spleen. This organ, on removal, weighed 18 oz., and measured 7 in. in length and 5 in. in width. An immediate progressive and remarkable change for the better took place, and in two months' time the boy looked perfectly normal. Since this operation he had had both scarlet fever and measles, and now was able to go to school. Apparently he had been quite cured by the splenectomy, had 85 per cent. of hæmoglobin, and was having no medicines at all.

Case of Splenic Anæmia treated by Splenectomy.—Mr. PERCY SARGENT.—Girl, aged 10 years. Comparatively well until November, 1912, when the abdomen was noticed to be enlarging. In November she was found to have ascites and slight pyrexia. Abdomen opened on the supposition that the case was one of tuberculous peritonitis. Much clear fluid escaped; nothing abnormal felt. A fortnight later edge of spleen felt; no fluid detected. From this time onward spleen rapidly enlarged and by December the 31st could be felt below umbilicus.

Blood-count: Erythrocytes, 4,300,000; hæmoglobin, 40 per cent.; colour index, 0.5; moderate poikilocytosis; fair number of normoblasts; white cells, 2000; polynuclear neutrophils, 63 per cent.; small lymphocytes, 33 per cent.; large lymphocytes, 3 per cent.

On January the 12th, 1913, the spleen was removed by Mr. Sargent through a para-median incision. It was extremely friable, and after removal weighed 1 lb. There were no inflammatory adhesions. Hæmorrhage was not excessive. Although the main vessels were tied at an early stage, several large veins at the upper part gave rise to trouble and necessitated the leaving on of three pairs of artery forceps. The child made an uninterrupted recovery. Six weeks later a severe hæmatemesis occurred and she was admitted to St. Thomas's Hospital. She was very pale; edge of liver palpable; pulse averaged 100; blowing apical systolic murmur; urine normal.

Blood-count: Erythrocytes, 2,936,250; hæmoglobin, 30 per cent.; colour index, 0.5; ghosts, microcytes, and macrocytes present; very large number of normoblasts; white cells, 29,260; polynuclear neutrophiles, 55.25 per cent.; small lymphocytes, 40.25 per cent.

For the next few weeks she had irregular pyrexia and a varying amount of diarrhœa. Treated with liquor arsenicalis.

Blood-count when discharged: Erythrocytes, 3,028,125; hæmoglobin, 35 per cent.; colour index, 0.6; very few normoblasts; white cells, 9100; polynuclear neutrophiles, 59.75 per cent.; small lymphocytes, 18.25 per cent.; large lymphocytes, 18.25 per cent.

Splenectomy for Congenital Acholuric Jaundice.—Dr. J. H. THURSFIELD.—The patient was aged 9 years, when he was first seen in the early part of 1902. He had always been of a yellowish colour, though the parents were unable to state whether the tint had been noticed actually at birth. He was admitted to the Hospital for Sick Children for anæmia and shortness of breath; his heart was considerably dilated and there was a harsh systolic murmur audible over the præcordia. The liver was palpable 1 in. below the costal margin and the hard smooth spleen reached to within 1 in. of the iliac crest. His erythrocytes were 1,460,000 per cubic millimetre and his hæmoglobin 30 per cent. The fæces contained plenty of bile-pigment, while the urine, though of a dark colour, contained none. On several occasions a well-marked urobilin band was seen by the spectroscope. The cerebro-spinal fluid did not contain bile, nor did the serum of the blood on the only occasion on which it was examined. A Wassermann test was negative.

The patient improved for a short time, but was readmitted in August, 1912, more anæmic and exhausted than before. His erythrocytes were now only 1,097,000 per cubic millimetre and his hæmoglobin had sunk to 20 per cent. The fragility of his corpuscles to solutions of saline was found to be considerably in excess of the normal; hæmolysis began in a 65 per cent. dilution.

Since the boy was obviously in danger and showed no signs of improvement, Mr. Tyrrell Gray removed the spleen. At the operation three spleniculi were seen and left untouched. The spleen was firm and hard, and when squeezed free of blood weighed 597 grm. After the operation there was the usual leucocytosis, but at the end of ten days this had disappeared, and three weeks later the boy had entered on a steady course of improvement. The yellow tint disappeared and the erythrocyte count began to move upwards. The fragility of his erythrocytes, however, remained somewhat greater than the normal. Nine months after the operation his erythrocytes were 5,186,000 per cubic millimetre and his hæmoglobin 95 per cent. The fragility was still a little greater than normal. At the present time, sixteen months after the operation, he was in excellent health, with no signs of the

disease. His red blood-corpuscles were 5,000,000 per cubic millimetre and his hæmoglobin 100 per cent. The standard of fragility was now absolutely normal.

Case of Splenic Anæmia treated by Splenectomy.—Dr. GEOFFREY HOFFMANN (for Dr. H. P. HAWKINS).—Girl, aged 12 years. She was shown to the Section in November, 1911, before the spleen was removed. At the age of four she had suddenly vomited half a pint of blood, and when aged six years she had a second hæmatemesis of one pint. Early in 1910, at the age of eight, she began to have frequent attacks of pain in the stomach and around the heart. Crops of small purpuric spots appeared on the chest, and she is said to have bruised easily. Epistaxis occurred on one occasion.

She was admitted into St. Thomas's Hospital in April, 1910, when melæna was noticed on several successive days. The spleen projected $2\frac{1}{2}$ in. below the costal margin, and was indurated. Red cells were 2,425,000; colour index 0.7; leucocytes were 3700. Coagulation-time was two minutes five seconds. Some improvement took place after a month of arsenic. Henoch's purpura was diagnosed at this time.

She remained fairly well, though always pale, until July the 27th, 1911, when she suddenly vomited a pint of blood. This was repeated twice during the next few hours, and melæna was seen on nine successive days. The spleen was enlarged and firm as before, and moved freely with respiration. Red cells were 2,200,000; colour index, 0.5; leucocytes, 2980, with no change in the relative proportions. The condition of the blood slowly improved under arsenic, and in November, 1911, the red cells numbered 4,328,000 and the colour index was 0.8. The liver was just palpable, though not hard. Jaundice had never occurred. She had another large hæmatemesis on December the 18th, 1911.

The spleen was removed by Mr Makins on January the 31st, 1912. There was little shock from the operation, and the wound healed by first intention. Just before operation the red cells were 4,400,000, hæmoglobin 90 per cent., and leucocytes 3,060. Three days later red cells were 3,620,000; colour index, 0.8; leucocytes, 43,480; 85 per cent. were polymorphonuclear cells and 4 per cent. small lymphocytes. The spleen showed perisplenitis and cirrhosis. Cultures were sterile on all media.

On February the 9th, red cells were 3,540,000; colour index 0.8; and leucocytes, 12,740; 55 per cent. polymorphonuclears; eosinophiles, 4.6 per cent.; small lymphocytes, 18.4 per cent.; large lymphocytes, 5.6 per cent.; large hyaline cells, 15 per cent.

In December, 1912, the patient was readmitted for tonsillectomy, and the blood examination then showed: Red cells, 6,100,000; hæmoglobin, 100 per cent.; leucocytes, 9520; small lymphocytes, 47 per cent.; polymorphonuclears, 32 per cent.; eosinophiles, 11.5 per cent.; large lymphocytes, 5.5 per cent.; large hyaline, 2.5 per cent.

In May, 1913, red cells were 4,500,000; hæmoglobin, 90 per cent.; leucocytes, 13,420. The relative proportions of the latter were similar to those in the last blood examination.

Since the operation she had been in good health and there had not been any more bleeding.

Philadelphia Pediatric Society.

February the 10th, 1914, WILLIAM N. BRADLEY, M.D., President.

Pseudo-Membranous Laryngitis, Non-Diphtheritic.—Dr. ELEANOR C. JONES showed a cast of the lower part of the larynx and upper part of trachea from a boy of 13½ months. Autopsy showed this cast-like material to line the entire trachea, lower larynx and bronchi as far as it was followed. It was white and fibrous above, soft and mucoid below. There was no membrane in the pharynx or on the tonsils. Beginning broncho-pneumonia was found in the lungs. Cultures from the throat and smears from the secretion in the trachea showed pneumococci, micrococci catarrhales, Gram-negative staphylococci, but no Klebs-Loeffler bacilli. The clinical diagnosis was laryngeal diphtheria, until corrected by the laboratory. The site for the diphtheroid membrane was unusual, and the organisms found were mainly pneumococci. The suprarenal glands were very pale, confirming the non-diphtheritic diagnosis. No blood-cultures were made nor was antitoxin given.

Dr. B. F. ROYER, of Harrisburg, said that he had frequently found cultures positive if taken from the lower end of the intubation tube when removing it, even though no positive cultures had been obtained from throat or vicinity of the larynx previously. Non-diphtheritic membranes were more commonly due to pneumococci than to streptococci. Dr. Royer also referred to a case of tracheal and bronchial diphtheria, the patient dying upon the operating table in Jefferson Hospital, and the specimens being in the museum of that institution, where a complete cast of pseudo-membrane began at the third tracheal rung and extended throughout the smallest bronchi. The diagnosis was only made at autopsy.

Quarantining Hospital Wards for Measles.—Dr. E. E. GRAHAM desires the present quarantine regulations for measles modified if possible. He considers measles very contagious, the contagion lasting from the earliest catarrhal symptom to the fading of the rash. Fifty per cent. occur during the first five years of life; 40 per cent. in the next five years. All children almost invariably, if not protected by a previous attack, contract it. It is dangerous in the very young and delicate infant. There is little danger in robust children over four years, if properly treated. 80 per cent. of deaths occur in children under five years. The contagion is short lived outside the body. It is a contact disease, and is less likely to be carried by a third person than is scarlet fever or diphtheria. Second attacks are rare. By closely watching exposed children Koplik's spots can usually be detected from one to three days before the rash and the child removed before it becomes a very active source of infection. Measles occurs in epidemics separated by periods of two, three or four years. All exposed children in schools and communities contract it and the epidemic ceases, only to reappear when a large number of children, not previously exposed, are again affected in a fresh epidemic. During an epidemic cases of measles are apt to occur in all wards to which children are admitted. Consequently these wards are often quarantined for from two to six weeks. At the same time it often

happens that other hospitals for children are also quarantined, and it may be impossible for a child dangerously ill with some acute disease to be admitted to a hospital. Dr. Graham's idea is to reduce the number of patients in the ward as rapidly as possible, transferring them to a small ward. If the parents wish to take a child home, ought we not to allow them to do so, provided the child is over four and can secure good medical attention and nursing at home? The names of such children should be given to the Board of Health. If a child is convalescent and has had measles previously ought we not to send that child home without consulting the parents? It will not carry the disease and it is well enough to leave the hospital. If the child is an only child, it should be sent home, whether it has had measles or not, if over three years and with good home conditions. Other children in the ward should be kept in strict quarantine in a small ward for fourteen days after the eruption has appeared in the measles case. The large ward should be scrubbed, fumigated, and immediately put into use. If a child over four years, who has already had measles, should apply for admission acutely ill it should be admitted, the parents being informed that it will be exposed to measles. It would be best to have all beds in the ward separated by glass partitions; then when measles occurs remove the measles patient and the child on either side of it; scrub the ward over a space of 20 ft. around the case, and continue admitting children to the ward. In a children's ward all beds ought to be separated by glass partitions; every child should be examined daily for Koplik's spots, coryza, rash, and fever, and suspicious cases should be immediately isolated. Resident physicians should learn to recognise measles before the rash is fully developed. In taking the history, previous illnesses and possible recent exposure to any contagious disease should be noted. Each patient should have his own thermometer, bed-pan, wash-basin, etc.

Hospital Treatment of Measles.—Dr. MATTHIAS NICOLL, jun., of New York, said that the attitude of the public toward measles depends on the environment and occupation of the persons affected by the presence of the disease. In a private house it is commonly regarded as little more than a hindrance to social activity; in the private school, hotel or apartment house, a nuisance; in the tenement, a grave misfortune; and in institutions and hospitals, a calamity. The death-rate from measles is difficult to determine, as it is unquestionably true that many cases are not reported. In 1911, in New York City, 25,540 cases were reported, with 785 deaths; only 2078 of these were treated in the hospitals of the department of health, with 161 deaths; giving a death-rate of 3 per cent. for outside cases and 8 per cent. for hospital cases. During the past year, among 29,163 cases reported, the respective death-rate was somewhat lower, the proportion between hospital and outside cases being about the same. The Riverside Hospital is situated on an island in the East River, patients being transported in a special hospital boat taking three-quarters of an hour for the trip. Only "straight" measles or measles with diphtheria are treated. There are several good-sized one-story pavilions, containing several wards of six to eight beds, which can be fairly well shut off from one another in cases of mixed infection, which, if they arise, are promptly removed to their appropriate pavilion. Great care is taken to keep these wards cool and well aired. During 1913, 1150 measles patients were admitted, 948 of of whom had "straight" measles, while the others were complicated by some other infectious disease, mainly diphtheria; 63.3 per cent. of patients

were five years old or less. Nearly 40 per cent. were sent from hospitals or institutions. Thirty-nine cases of scarlet fever and twelve cases of diphtheria developed in the wards, and seven cases of both: 196 cases had broncho-pneumonia on admission, and forty-two developed it later. Twenty-seven cases were intubated for laryngeal diphtheria. The percentages of fatal cases were as follows, excluding fifteen cases who died within forty-eight hours: "straight" measles, 6.96 per cent.; all cases, 9.3 per cent. compared with 30 per cent. in 1908, 13 per cent. in 1911, and 9.25 per cent. in 1912. The great mortality in previous years was largely due to treating cases in a single building containing a few large wards, badly over-crowded, with inefficient isolating facilities, for cases of mixed infection. Through careful bacteriologic work and the isolation of infected cases, together with strictest precautions against spreading the disease, only fifteen cases of vaginitis occurred, compared with ninety cases a few years ago. Dr. Nicoll described the new measles building, not yet occupied, constructed so as to give a maximum of light and air, with ample provision for the immediate shutting off of wards in which mixed infections occur and facilities for treating them in absolutely separate rooms. A case of measles in such a hospital should have as good a chance of recovery as if left in the home, which is at present not the case. A measles hospital is an absolute necessity in a large city, unless all general hospitals provide for treating measles when it arises, and certain hospitals provide for measles cases which cannot be properly cared for at home or are a menace to those about them. Until the city provides a measles hospital, the Health Department is justified in its present attitude; removing from homes and institutions only such cases as must be moved, for their own benefit or for the safety of those about them. It would seem that the health authorities would be more likely to act on Dr. Graham's suggestions, if the changes in regard to separating patients from one another in the wards were first carried out.

Dr. H. H. DOAN said that measles may be taken as the type of a contagious disease, being most readily communicable, exceeding even smallpox in this regard. As a cause of death it ranks high among the acute fevers of childhood. The period of incubation, nine to eleven days, is almost constant, the rash appearing on the thirteenth or fourteenth day after infection, almost uniformly. It is considered a disease of childhood only on account of the chances of exposure in early life. When introduced into the Faroe Islands in 1846, 6000 of a population of 7700 were stricken; in 1775, in the Sandwich Islands, 40,000 of a population of 150,000 died. It is common in army camps among troops from the country, exposed for the first time. It is usually transmitted directly; it is extremely doubtful if measles is at all contagious after the temperature has fallen. As it is highly communicable and is infective from the pre-eruptive stage, its suppression is most difficult. Isolation is quite worth while. Physicians should always wear gowns on entering the sick-room, as it is possible to convey measles by a third person. When a case is reported to the Bureau of Health, a medical inspector visits the premises, secures a history, placards the house, and excludes all inmates in any way associated with institutions of learning from school. For those remaining at home, this period of exclusion is three weeks. Should a school-child take up residence in a house where there are no children, he may return to school in two weeks. Should no other cases occur on the original premises, the placard is removed in two weeks and seven days later children are returned to school, after having been seen by a medical inspector. Fumigation is not required. Should a case of measles develop in a hospital

ward, it is removed to the Philadelphia Hospital or kept at the hospital in which it occurred, as other cases will most surely develop, and it is not a good plan to disseminate the disease by discharging exposed children, possibly establishing a number of foci. The ward is then kept under quarantine for two weeks.

Société de Pédiatrie, Paris.

January the 13th, 1914. (Bulletin No. 1.)

Anti-typhoid Vaccine in Children.—MM. GUINON and MALARTE showed the temperature charts of eleven cases of typhoid fever, including both benign and ataxo-adyynamic forms. Treatment was commenced from the seventh to thirteenth day in doses from $\frac{1}{4}$ to $1\frac{1}{2}$ c.c. given in the deltoid region. Local reaction was little marked. There was no immediate general reaction and the temperature did not seem influenced the same day. There were some remissions the day following, but too irregular and inconstant to allow of any conclusion. It was difficult, therefore, to judge the effect of the treatment on the duration of the disease, but it seemed to have cut short those of medium gravity and to be followed by a more satisfactory convalescence; it improved the intestinal condition, but did not prevent hæmorrhages, abscesses, nor relapses.

Difficulties in Diagnosing Appendicitis in Young Children.—M. VICTOR VEAU reported six cases with the following conclusions: Young children have no localised appendicular pain, some cry and are fretful, others try to remove clothing from the abdomen. Older children complain of their abdomen and point to the umbilical region. Definite localisation in the right iliac fossa is exceptional. Tenderness in the right iliac fossa is absent; the same may be said of resistance of the parietes. This is the reason that appendicitis is only recognised in grave cases with perforation and that simple cases are overlooked or considered rare in young children.

Paratyphoid Fever in an Infant aged 8 Months.—M. LAGANE related the case of a child nursed by her mother who was suffering from an attack of fever. Agglutination tests gave identical results in both mother and child. The source of the mother's attack was unknown, but the child had been probably infected through the milk. The incubation period was fifteen days in the child, the onset sudden; the fever lasted twenty-three days, and terminated by lysis.

Injections of Salvarsan by the Jugular and Epicranial Veins in Infants and Young Children.—M. BLECHMANN gave details of his technique and results, and showed an instrument which was a kind of modification of Bier's apparatus for obtaining blood from young children for Wassermann's reaction.

Congenital Dilatation of Colon and Absence of Thyroid in an Infant aged 7½ Months.—M. DUMAS.—The existence of obstinate constipation since birth, the size of the abdomen and radioscopy suggested Hirschsprung's disease. The clinical course, however, the beneficial effect of hormonal and thyroid extract, and the aspect of the child, pointed to thyroid aplasia with deficient peristalsis.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Three types of occlusion of the œsophagus in early life (*Am. Journ. Dis. Child.*, 1913, vi, p. 1).—**T. M. Rotch**.—(1) Boy, aged 25 months. X rays showed a narrowing of the lower third of the œsophagus. (2) Girl, aged 10 years, with spasm of the cardiac end of the œsophagus. (3) Boy, aged $5\frac{3}{4}$ years, with a stricture 24 cm. from the incisor teeth. Rotch considers there are two classes of œsophageal narrowing not due to trauma. In the first the stricture is due to an organic condition, while the other is functional, with perhaps the addition of a congenital condition of a brain centre represented by a lack of inhibition. F. R. B. ATKINSON.

The position of the stomach in children in relation to posture (*New York Med. Journ.*, 1913, xcvi, p. 549).—**Sever**, from examination of eighty-three cases, states that the average position of the stomach is a much lower one than has been previously suspected, and that to find a stomach at or well below the crests of the ilium is not at all unusual. We must also change our ideas as to the shape of the child's stomach; it is generally large, and either horizontal or of the "sink drain" type. The ideal so-called "cow's horn" type is rare. To find a child's stomach low does not therefore mean a pathological ptosis. J. PORTER PARKINSON.

Gastric motility in infants (*Arch. of Ped.*, 1913, xxx, p. 740).—**Maynard Ladd** has studied over 200 skiagrams of infants' stomachs, using a feed of two rounded teaspoonfuls of subcarbonate of bismuth. He does not think that the bismuth causes the motility of the stomach to be diminished, since no difference in the emptying-time of the stomach could be observed on doubling the dose of the bismuth. Several interesting results were noted. Peristalsis of the usual type appeared uncommon in the infants' stomachs; they emptied themselves rather by a general contraction of the organ, squeezing out the contents. Normally some food seems to pass into the intestine as soon as it is taken into the stomach, and the major part of the feed leaves the stomach within $1\frac{1}{2}$ to $2\frac{1}{2}$ hours in breast-fed and bottle-fed babies. The remainder may fail to pass from the stomach until five or even seven hours have elapsed from the feeding-time. Feeding again at the end of three hours appears to accelerate the passing of the first meal, but a second feed soon after the first delays the emptying of the stomach. A high percentage of casein prolongs the emptying-time of the stomach, while the presence of fat and possibly of barley-starch probably diminishes it. REGINALD MILLER.

Further study of the anatomy and physiology of the infant stomach based on serial Röntgenograms (*Am. Journ. Dis. Child.*, 1913, vi, p. 232).—**G. R. Pisek** and **L. T. LeWald**, as a result of their investigations, conclude that there is no definite type of stomach which is normal in an infant. They were able to distinguish (1) the ovoid shape, (2) the tobacco-pouch or retort shape, especially common in weaklings, and (3) the pear shape, with base upwards and to the left. The shape of the stomach does not depend directly upon the amount or character of the food ingested, but rather upon the quantity of air in the organ. In the majority

of cases the pylorus is behind the pyloric third of the body of the stomach. The authors were well able to study the passage of food through the stomach, and found that in a number of cases bismuth passed into the duodenum within a minute after the stomach had been filled by gavage, the average time being five minutes. Except on a semi-solid diet the viscous tended to empty itself with remarkable rapidity, a large number being empty within an hour. The authors on these results question the propriety of long-interval feeding after the German fashion. The retarding influence of alkalies and the lack of intermixture of the gastric contents were also confirmed in these infants.

REGINALD MILLER.

Radiographic studies of the gastro-intestinal tract in infants (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1419).—H. D. Chapin.

Use of the Roentgen ray in the diagnosis of obscure abdominal conditions in infancy and childhood (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1422).—J. L. Morse.—These papers, which are illustrated by skiagrams, deal with the variations in the alimentary tract in health and disease, but neither of them lends itself to abstraction. Readers are referred to the original monographs.

T. R. WHIPHAM.

Stomach-aches associated with general infections in children (*Practitioner*, 1914, xcii, p. 26).—H. Tyrrell-Gray finds that interference with the normal processes of peristalsis gives rise to pain and may occur in (a) the lumen of the intestine: In measles acute inflammations of the lining membranes of the body are very common, and in the intestine give rise to diarrhoea with or without pain, with absence of undigested food in the mucous stools. (b) The intestinal wall: (1) Acute rheumatism: Severe colicky pain occurs sometimes, and if the infection is very severe, hæmorrhage giving rise to Henoch's purpura. (2) Diphtheria: Acute abdominal pain with passage of blood and mucus may occur. (3) Serum toxæmia. (4) Acute follicular tonsillitis. (5) Intussusception and appendicitis: Acute infections may be factors in the ætiology of the former when the dietetic factor can be excluded, and it is well known that acute infections can produce appendicitis. (c) The mesentery: Chronic continued infection from some septic focus may affect intestinal functions, and cause chronic irritation of the bowel and enlargement of the mesenteric glands, which frequently kink the appendix and induce repeated stomach-aches, until finally the lumen is blocked and acute appendicitis results. The author believes that many of the intestinal and dyspeptic troubles of later life owe their origin to repeated acute or chronic general infections in childhood.

F. R. B. ATKINSON.

Recurrent vomiting (*Arch. of Ped.*, 1913, xxx, p. 445).—A. Clifford Mercer gives a clear account of our present knowledge of this condition. He regards "recurrent vomiting" as a better term than "cyclical vomiting," because, as other writers have also pointed out, the attacks do not occur at sufficiently regular intervals to warrant the use of the latter adjective. In the same group he includes also lithæmic and bilious or nervous vomiting and migrainous gastric neurosis. The first case, according to this writer, was described by Cruère in a publication of the Dijon Medical Society in 1841, which thus anticipated Gee's paper by forty-one years. Like most recent writers on the subject he thinks that acidosis is an incidental rather than a fundamental cause of recurrent vomiting, and he also points

out the similarity between it and post-anæsthetic poisoning. He agrees that all treatment in a well-developed attack has failed to stop the vomiting. The alkaline treatment has been remarkably successful in some hands and a failure in others. It seems to be more likely to be successful when started in the prodromal period. If the prodromata are promptly recognised and the diet immediately curtailed or food is temporarily omitted, the intestinal tract cleared and bicarbonate of soda given freely, an approaching attack can be prevented. The treatment is not simply alkaline. It is also one of dietetic rest, liver rest, and toxic elimination, catharsis in treatment replacing emesis in the disease. He describes a case of migraine and another of recurrent vomiting in support of his contention.

FREDERICK LANGMEAD.

Ulcer of the stomach and duodenum in children (*Gaz. des Hôp.*, 1914, LXXXVI, p. 213).—**A. Mathieu**.—In the infant one may find multiple punctiform ulcerations or sometimes less numerous or single round ulcers. They may appear in the first few days of life, or later on be accompanied by malnutrition and rickets. They may cause death without other symptoms than melæna. Mathieu quotes the case of a child, aged 10 months, with a duodenal ulcer which caused pyloric spasm and vomiting but neither hæmatemesis nor melæna. Death resulted after three months' illness. In later childhood Brinton has given statistics of only two cases under ten years and eighteen between ten and twenty years. Moutier states that out of 380 females the ulcer started in 84 probably between the ages of 11 and 20, and holds that ulcer starts most probably about the time of puberty. The clinical history of a case of ulcer of adolescence is given as follows: Gastro-intestinal troubles when weaned, at four years old epigastric pain, vomiting and exaggerated hunger, persistence of these symptoms till at the age of 11½ years hæmatemesis and melæna appeared and typical symptoms of ulcer.

J. PORTER PARKINSON.

Duodenal ulcers in infancy (*Am. Journ. Dis. Child.*, 1913, VI, p. 381).—**L. Emmett Holt** records four cases. (1) Female child, aged 3 months, admitted to hospital for loss of weight, vomiting and constipation. The vomiting had been present since the age of two weeks and suggested pyloric stenosis. Temperature subnormal. No marked abdominal distension, nor tenderness. Sudden death took place. Post mortem general peritonitis was found, which was due to the perforation of a duodenal ulcer on the posterior wall just below the pylorus. (2) Male child, aged 2 months, admitted for marked jaundice and progressive loss of weight. Blood was present in the stools. Death was due to marasmus. Post mortem two small ulcers were found in the duodenum, one just below the pylorus, and the other 1 cm. lower down. (3) Female child, aged 4 months, admitted for diarrhœa and vomiting. Sudden death took place due to concealed hæmorrhage. Post mortem the stomach was found to contain a large quantity of fluid blood, but no ulcers, and a large red clot extending into the duodenum. A single ulcer was found in the duodenum extending to the peritoneal coat. (4) Male child, aged 12 days, admitted for diarrhœa and vomiting since birth. Death forty-eight hours after admission. Multiple erosions were found in the gastric mucosa, and a single ulcer in the duodenum 1 cm. below the pylorus. Holt gives a summary of the literature of duodenal ulcers in the first year of life, of which there are now 95 on record.

J. D. ROLLESTON.

Clinical and anatomical observations in a child with congenital stenosis of the bowel (*Monatsschr. f. Kinderheilk.*, 1913, XII, p. 341).—**K. Stolte** describes the autopsy on a child, aged 9 days, in whom marked stenosis of the duodenum was found. F. R. B. ATKINSON.

Pancreatic insufficiency (*Am. Journ. Dis. Child.*, 1913, VI, p. 65).—**Langley Porter** regards as of this type cases called "celiac disease," "Herter's intestinal infantilism," and "Bramwell's pancreatic infantilism." The primary lesion he attributes to an infective duodenitis, with a secondary invasion of the pancreatic ducts and the production of pancreatic insufficiency. The infection of the duodenum occurs in the presence of unusual bacterial forms in the upper intestine. It is not suggested that one organism is specific for this condition; more probably any pathogenic bacterium, even the colon bacillus, under abnormal intestinal conditions may lead to a pancreatitis. In one case great improvement occurred under treatment by a vaccine made of a Gram-positive bacillus. REGINALD MILLER.

Ætiology and significance of pericolic membranes (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 248).—**D. Cheever**, in dealing with the question of the membranous structures which are frequently found enveloping the cæcum and the ascending and transverse colon, considers that they may be divided ætiologically into (1) congenital and (2) those due to peritoneal irritation. As regards the former he has found a well-marked pericolic veil in a child aged 12 years, and in an examination of thirty stillborn infants at Harvard there were four instances of a membrane extending from the parietes over the hepatic flexure and ascending colon (and in one instance over the cæcum) and fusing with the peritoneum of the colon near its mesenteric border. In three of these instances there were other developmental aberrations present, such as lack of normal fixation of the cæcum, a continuance of the gastro-hepatic omentum to the right between the duodenum and gall-bladder, a Meckel's diverticulum, and an undescended testicle. It would seem that the method of origin of these membranes must be involved in the rotation and descent of the cæcum from its first point of fixation beneath the liver, the most likely process being the twisting of the cæcum and proximal colon on its long axis during descent. The author is of the impression that congenital membranes in the majority of cases cause no symptoms whatever. In the event of constrictions occurring they should be divided, preferably with the cautery protected by a spatula introduced beneath the membrane. The other types of membrane caused by visceral or peritoneal irritation are more likely to cause symptoms and to require operative relief. T. R. WHIPHAM.

Membranous colitis in children (*Arch. f. Kinderheilk.*, 1913, LXII, p. 47).—**E. Steinscheider** records 3 cases, 2 in boys, aged 2 and 6 years, and 1 in a girl, aged 1 year and 7 months. As in the mucous colitis of adults passage of membrane in the stools is the characteristic feature of the disease, but in children there is a complete absence of pain. In all 3 cases there had been a recent attack of enteritis. Two of the children suffered from lichen urticatus and eczema. J. D. ROLLESTON.

Amœbic dysentery in infants (*Journ. de Méd. de Paris*, 1913, XXXII, p. 701).—**Lesage** and **Robillier** quote four cases of amœbic dysentery in infants under two years old. The cause may be dried fruits, but some cases

are due to direct infection. The incubation is one or two days. The symptoms resemble those in the adult; these are severe abdominal and rectal pains and tenesmus. The stools are frequent, small and bloodstained; there may be thirty or forty in twenty-four hours. There is an acute form with sudden onset, which may subside under treatment or become chronic. There is a sub-acute form with only slight fever and semi-solid foetid stools. There are no general symptoms in the chronic form, in which the dysenteric stools follow a slight diarrhoea. This form does not yield easily to treatment and is very apt to recur. The tongue is moist and red or slightly furred. The abdomen is a little tense or retracted and tender, especially in the left iliac fossa. Digestion is incomplete, and the residue tends to irritate the dysenteric ulcerations. The liver is increased in size, but secretion of bile is lessened. The urine is slightly diminished. Nervous troubles are rare. There is a marked eosinophilia, and in chronic cases anaemia. There may be transient oedema of face and extremities. Prolapsus recti may appear. Abscess of the liver is a rare complication in the infant. The diagnosis can only be made certain by microscopic examination of the stools. The acute form resembles bacillary dysentery but in this there are more severe general symptoms, more evidence of intoxication, higher fever, more frequent stools, vomiting and tendency to syncope. The stools are viscid, opaque or transparent, green, white or yellow. Faecal matter and blood are mixed together in variable quantity. The reaction is always alkaline and it is a good prognostic sign when it becomes acid. Microscopically there are epithelial cells, red and white corpuscles, crystals like Charcot-Leyden crystals in addition to those normally present, phosphates, oxalates, mucus, and many amoebæ. The specific amoeba is generally the *Amœba tetragena* of Viereck. Emetin is the best treatment, 0.01 grm. twice daily to a child of two years old.

J. PORTER PARKINSON.

Y-bacillus dysentery in infants and young children ('*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 35).—**J. Bauer, Ellenbeck and Fromme** describe an epidemic of 29 cases which occurred during October, 1912, in a Dusseldorf home for women and children. Two obstinate cases of dysentery had already occurred there in July and August. Two thirds of the staff, though perfectly well, yielded a serum which agglutinated the Y-bacillus. Eleven exclusively breast-fed infants entirely escaped, while of ten on mixed breast and artificial feeding six showed more or less evidence of dysentery. Dysenteric stools occurred in eleven cases. Four infants showed a tendency to dyspepsia. Three had formed stools with only traces of mucus. In many there was no fever. The disease lasted from a few days to one or two weeks. No complications occurred and all recovered. In only seven out of seventeen cases of clinical dysentery was the Y-bacillus found in the stools. Seven of the twenty-nine cases gave a negative serum reaction.

J. D. ROLLESTON.

Y-bacillus dysentery in infants ('*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 689).—**E. Siegel**.—During the summer and autumn of 1912, sixty infants in Baginsky's hospital suffering from gastro-intestinal disturbance had their stools examined for bacilli of the coli and dysentery group; 8 out of 9 cases with symptoms of dysentery showed dysentery bacilli of the Y type and no other dysentery bacilli; in the remaining case Gaertner's *B. enteritidis* was found. The symptoms and pathological anatomy of the Y cases were those of follicular enteritis. Four died. The remaining 51 cases

had no symptoms of dysentery but various gastric disturbances or diarrhoea. None of these showed any Y-bacilli, but paratyphoid B bacilli and *B. coli*.

J. D. ROLLESTON.

The chemical reaction of the infant's fæces (*Gazz. Med. Ital.*, 1913, LXIV, p. 261).—P. Binda finds that in infants at the breast the reaction is normally acid; the acidity estimated in c.c. of solution of soda per 100 grm. of fæces is on an average 18–19 c.c. Marked variations occur even under normal conditions, but probably a maximum of 28–30 c.c. and a minimum of 10 c.c. express the extremes. In bottle-fed infants the acidity is markedly less, being on an average 5 c.c. of solution of soda per 100 grm. of fæces. As a general rule an acidity above 10–15 c.c. of soda solution or distinct alkalinity point to some anomaly of digestion.

VINCENT DICKINSON.

The frequency, diagnosis and latest treatment of threadworms in children (*Arch. f. Kinderheilk.*, 1913, LXII, p. 49).—A. Lechler, as a result of his observations, sums up as follows: (1) Amongst 300 cases of children examined 16·33 per cent. were affected with the ascaris. (2) The diagnosis can only be made with certainty when the worms or eggs are found in the stools. (3) Telemann's method possesses no advantages over the simple method of microscopic examination of the stools. (4) Oleum chenopodii anthelminthici and the emulsion called "vermolin" are to be recommended.

F. R. B. ATKINSON.

On Ascaris lumbricoides, Oxyuris vermicularis, and Trichocephalus dispar in children (*Wien. klin. Rundschau*, 1913, xxvii, pp. 387, 402, 419, 436, 451, 467, 483).—Neumann gives a very extensive but somewhat discursive review of this question. She gives the following statistics for Berne and neighbourhood as to the frequency of infection at different ages:

Age in years	1-3	4-6	7-9	10-12	13-16
<i>Ascaris</i>	19·23	26·6	58·81	33·3	30
	per cent.	per cent.	per cent.	per cent.	per cent.
<i>Trichocephalus</i>	11·53	13·33	35·29	11·11	20
	per cent.	per cent.	per cent.	per cent.	per cent.

These figures were obtained by an examination of the fæces of 122 children in the hospital. Oxyuris may cause such irritation as to lead to sleeplessness, various nervous symptoms, and convulsions. Cases of appendicitis caused by the parasite are cited. They are often not easy to dislodge. When possible santonin should be given in glutoid capsules in order to deal with the worms in the upper part of the intestine. Ascaris is the most wide-spread of worms; the literature is quoted to show the many serious symptoms to which they must sometimes give rise. The *Ascaris* has been found in the stomach, liver, pancreas, and biliary canals. There is good evidence of appendicitis and perforation caused by the parasite, but it cannot be definitely stated that suppurative conditions in the intestines have been primarily due to the *Ascaris*. There are good grounds for admitting the toxic effect of *Ascaris* (Chauffard's ascariasis typhoid). *Trichocephalus* is usually a harmless parasite, but a case is described where a very severe anæmia was associated with masses of these worms in the rectum. The

hæmoglobin was 50 per cent., and the red blood-corpuscles 3,200,000; eosinophiles 4 per cent. Treatment is difficult; children can be given thymol 0.3 gr. two to three times a day for several days. In all cases of "worms" the fæces should be examined for eggs before giving the child a clean bill of health.

M. D. EDER.

Perforation of the bowel by ascarides ('*Arch. f. Kinderheilk.*,' 1913, LXII, p. 11).—H. Plew goes exhaustively into the literature of this subject, and describes a case of his own in a boy, aged 3 years, who died at the second week of typhoid fever from symptoms of perforative peritonitis. The autopsy showed amongst other appearances a perforation below the duodeno-jejunal flexure due to *Ascaris lumbricoides*.

F. R. B. ATKINSON.

Incontinence of urine due to thread-worms ('*Journ. de Méd. de Paris*,' 1913, XXXIII, p. 520).—A. Jacquemin.—This is most common in boys under the age of twelve years. It is a neurosis often accompanied by great excitability, nocturnal terrors, epilepsy, chorea, etc. The causes may be phimosis, abuse of drinks, emotion, cold, etc., but most frequently thread-worms. These are often the original cause, but with their disappearance the incontinence does not always cease; the patient has to be treated for the neurosis which keeps up the habit. Severe measures are only harmful; the child must be encouraged and his confidence restored. Each evening 5-15 gr. of antipyrin may be given with 2-10 drops of laudanum. Sometimes epidural injections of physiological serum are useful, or its rectal injection may be substituted.

J. PORTER PARKINSON.

Helminthiasis and tubercular meningitis ('*Berl. klin. Woch.*,' 1913, L, p. 1987).—J. Przedborski.—A boy, aged 2½ years, was brought to hospital with a history of having vomited a round-worm. No worms had been seen in the stools. He had always been delicate, and had been under treatment for phlyctenular conjunctivitis and a tuberculous skin eruption. Fifteen drops of oleum chenopodii were given and 125 worms (*Ascaris lumbricoides*) were passed in the next two days, ranging in size from 190 mm. long and 3 mm. broad to 35 mm. long and 1 mm. broad. Within a few days well-marked symptoms of tuberculous meningitis developed and death took place within a week. The autopsy showed tuberculous meningitis, caseous tracheo-bronchial glands, and acute general miliary tuberculosis. The intestine was free from worms and any inflammation.

J. D. ROLLESTON.

Surgery.

Congenital fistula of the upper lip ('*Journ. de Méd. de Bordeaux*,' 1913, XLIII, p. 585).—Parcelier records a case in a girl, aged 17 years, who had had a fistula of the upper lip from birth. It was situated 1 cm. to the left of the midline, 3 mm. from the border of the mucous membrane, and had been discharging a large quantity of muco-pus, especially for the last year. On palpation the fistula could be traced up to the corresponding nostril. Injections of iodine proved ineffective, but definite cure followed extirpation, which was carried out from the inner side of the lip.

J. D. ROLLESTON.

Operation for hare-lip in the out-patient department (*Edin. Med. Journ.*, 1913, xi, p. 419).—**James H. Nicoll** points out that it is in the unilateral cases that the effects of scar contraction are most troublesome. In the avoiding of flat nostril, notched-lip and asymmetrical mouth in unilateral hare-lip, experience has led him to adopt five lines of procedure which are more or less opposed to much of the current teaching on the subject. They may be briefly stated as follows: (1) Over-tilting of the intermaxillary in alveolar cases; (2) a moderate degree of tension; (3) insertion of tin-foil between the soft parts and the periosteum; (4) median position of probalial juncture; (5) nostril moulding.

J. ALLAN.

Congenital occlusions of the œsophagus and lesser bowel (*Glas. Med. Journ.*, 1913, lxxx, p. 16 *et seq.*, and p. 90 *et seq.*).—**G. H. Edington** carried out a most exhaustive investigation and arrived at the following conclusions. A. **Æsophagus.** (1) It is highly probably that imperforate pharynx is due to abnormal relationship of the tracheo-œsophageal ridges to the posterior (dorsal) wall of the fore-gut. (2) The abnormal relationship consists probably in the ridges being placed obliquely. (3) Should a partition exist below the tracheo-œsophageal fistula there is reason to believe that the ridges have been formed in two parts, of which the upper have been obliquely placed. (4) The lower ends of the obliquely placed ridges having come in contact with the posterior wall of the fore-gut, a permanent union results, shutting off the upper from the lower segment of the œsophagus. (5) Meconium may be found in the bowel. B. **Duodenum.** (6) There is frequently a close relationship between a duodenal occlusion and the point of entry of the bile and pancreatic ducts. (7) Occlusion without relationship to the ducts may occur. (8) While the former class may be related to the development of the biliary and pancreatic apparatus, both classes may result from the epithelial occlusion which normally occurs in the course of development of the duodenum. (9) A duodenal septum, although causing an actual obstruction, may be the seat of a microscopic channel connecting the lumen above with that below the septum. (10) Such a channel has been erroneously looked upon as an abnormality of the ducts. (11) Abnormal disposition of the pancreas may accompany duodenal septum. C. **Ileum.** (12) Occlusion of the ileum is usually caused by structural malformation (septum, etc.). (13) The malformation has a wide range of situation, from high up in the ileum to its lower end. (14) There may be no structural malformation, in which case obstruction is produced by a plug of mucus. (15) As regards ætiology, in two of his cases peritonitis was the causal factor, in two the cause was embryological, probably related to obliteration of the vitelline duct; in the remaining two no cause could be suggested for the mucous obstruction. (16) In three cases there was deficiency of circular muscularis, marked when compared with the longitudinal layer. (17) This deficiency is in keeping with the view that the occlusion of the bowel was produced by pressure acting from without inwards. (18) The gut distal to the obstruction is not merely empty, but unexpanded. Its structure is normal, but in miniature. Several cases are given, and the paper, which is an important contribution to current medical literature, is illustrated by numerous plates and figures.

J. ALLAN.

Diverticulum above a cicatricial stenosis of the œsophagus (*Jahrb. f. Kinderheilk.*, 1913, lxxviii, p. 83).—**H. Flesch** describes this condition in a girl, aged 5 years, due to swallowing caustic potash. Death occurred four years afterwards.

F. R. B. ATKINSON.

Case of child in whose œsophagus a halfpenny had remained for eight years (*Edin. Med. Journ.*, 1913, xi, p. 519).—**W. G. Porter**.—The boy, when aged 4 years, had swallowed a halfpenny, which had never been seen since. He came under observation for vague gastric symptoms. His development and general health were poor. An X-ray photograph located the foreign body in the œsophagus between the sixth and seventh dorsal vertebræ. When its removal was attempted the halfpenny slipped into the stomach, and though the boy said he had passed it one day, it was not found in the stools. His general condition very markedly improved and he put on weight. The chief points of interest are: (1) The length of time the coin had remained impacted without causing any obvious injury to the œsophagus; (2) the indefiniteness of the symptoms, more especially the absence of dysphagia; and (3) the extraordinary and rapid improvement after the coin had been dislodged, showing that it really was the cause of the illness.

J. ALLAN.

Enterogenous mesenteric cysts (*Johns Hopkins Hosp. Bull.*, 1913, xxiv, p. 316).—**R. H. Miller** records a case of an enterogenous mesenteric cyst which produced intestinal obstruction in a female infant, aged 4 days, and discusses fully the nature of this special form of mesenteric cyst, of which he has collected twenty-eight since 1900. Mesenteric cysts of intestinal origin may be derived in two ways: (a) by sequestration from the intestine during embryonic development; this was proved to occur in 1908 by Lewis and Thyng. These cysts may occur in the upper part of the small intestine and may be multiple or multilocular. A remarkable example of a retroperitoneal cyst containing eight pints of fluid and resembling an hour-glass stomach is quoted from Ahrens; the fluid was weakly acid and digested egg-albumin on the addition of HCl, and the lining membrane showed multiple ulcers. (b) The remains of the vitelline or omphalo-mesenteric duct or Meckel's diverticulum, when it arises from the concave side of the intestine or acquires an intra-mesenteric position, may give rise to juxta-intestinal cysts near the lower end of the ileum. Enterogenous mesenteric cysts may be exact reproductions of the intestine, or the epithelial lining may vary; it may be stratified, cuboidal or ciliated. Apparently a cyst of the mesentery has never been correctly diagnosed. About half the cases have acute intestinal obstruction and prove fatal unless treated surgically. Complete obstruction is usually due to volvulus. There is a striking resemblance to intussusception in the symptoms and in the special incidence of the two affections in the first decade of life. In the other group of cases, the latent cases, the signs and symptoms are not uniform; pain is common, but not characteristic, and many, perhaps most of the cases, give a history of mild intercurrent attacks of partial intestinal obstruction.

H. D. ROLLESTON.

Mucous cyst of the cæcum in an infant ten weeks old, producing obstruction of the ileo-cæcal valve and symptoms simulating an intussusception (*Am. Journ. Dis. Child.*, 1913, vi, p. 99).—**A. D. Blackader**.—At an operation for removal of the symptoms excision of a retention cyst of the appendix was performed. The author could only find three cases in the literature of retention cysts in the neighbourhood of the ileo-cæcal valve leading to obstruction and invagination.

F. R. B. ATKINSON.

The diagnosis of intussusception by X ray (*Am. Journ. Dis. Child.*, 1913, vi, p. 93).—**I. M. Snow** and **M. Clinton** report the case of an infant nearly 3 months old, whose case was diagnosed by the X rays with the colon filled with bismuth emulsion. The skiagram showed an unreduced intussusception in the right quadrant of the abdomen. Operation was performed and the child recovered.
F. R. B. ATKINSON.

Strangulated hernia of cæcum and appendix in an infant (*Journ. de Méd. de Bordeaux*, 1913, LXXXIV, p. 533).—**Codet-Boisse** successfully operated on a child, aged 11 months, with a congenital right inguinal hernia which had been strangulated for four days, and had resisted all attempts at reduction. Kelotomy followed by radical cure was performed. The appendix was healthy.
J. D. ROLLESTON.

Acute appendicitis in infancy and childhood (*Med. Record*, 1914, LXXXV, p. 9).—**W. G. Vincent**.—The disease is rare under 2, rather uncommon under 5, but frequent between 5 and 15 years. Murphy found that the symptoms occurred in the following order: pain in the abdomen, nausea and vomiting, general abdominal sensitiveness, and rise of temperature; with extremely rare exceptions the treatment is always surgical.
F. R. B. ATKINSON.

Appendicitis in childhood (*Birmingham Med. Rev.*, 1914, xxv, p. 26).—**S. Barling** finds that 21 per cent. of his 132 acute cases in children under twelve died, compared with 12·7 per cent. in adults during the same two years. In 40 per cent. of his cases a concretion was found. He believes that the greater mortality in children is due partly to this concretion and also to the difficulty in diagnosis. In operating as little should be done as possible, and no prolonged search made for the appendix. Open ether is the best anæsthetic.
F. R. B. ATKINSON.

Appendicitis in measles (*Thèses de Paris*, 1913-14, No. 109).—**G. Le Lyonnais**.—The thesis contains the histories of 18 cases, including 5 hitherto not published in children aged from 3 to 8 years. The principal conclusions are as follows: (1) The pathogeny is thus explained: (i) The appendix is a lymphoid organ which reacts to infections like the tonsil. (ii) The virulence of the normal micro-organisms of the appendix is exalted in the course of the new infection. (iii) Micro-organisms foreign to the appendix are sometimes conveyed to it by the blood and lymph. (iv) The intestinal enanthem may serve as a portal of entry for the infection. (2) The chief symptoms are vomiting and localised pain; (3) The prognosis is not aggravated by the co-existence of the two diseases (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1910, vii, p. 181).
J. D. ROLLESTON.

Appendicitis with an unusual complication (*Austral. Med. Journ.*, 1913, II, p. 1199).—**F. T. Beamish** found on laparotomy on a girl, aged 14 years, an inflamed and perforated appendix and oedematous black coils of the ileum; the appendix was removed and the affected coils of the ileum resected. The cæcum was bound down in the pelvis. The patient completely recovered.
F. R. B. ATKINSON.

Rupture of the sigmoid by an air-blast (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1898).—**H. Shoemaker** reports the case of a mill-boy on whose anus another lad played an air-hose while he was leaning down. The

blast was of 120 lb. pressure to the square inch. The boy dropped unconscious at once, and was removed to hospital 20 hours later with fever and severe abdominal signs. The abdomen was opened and the peritoneum was found full of blood with a slight odour. The upper portion of the rectum and all of a very redundant sigmoid were split along the free margin of the intestine. Above the sigmoid and in the lower portion of the descending colon two transverse tears crossed the bowel. The effects of the air-blast, by the stretching and checking of the peritoneum as well as by the congestion of the blood-vessels, could be seen as far as the cæcum. The small intestines were collapsed and were not congested. The tear in the intestine was not completely through it. The serous and muscular coats were torn through, but the mucous coat was stretched to the thinness of tissue-paper and filled a 10-inch gap. The mucosa was folded in by interrupted stitches of sea-island cotton placed in the muscular and serous layers of the bowel. A double row of stitches was used throughout. The intestine was opened well above the traumatic area of the bowel in the descending colon. A No. 24 French catheter was passed out of the rectum and fastened in the bowel by one stitch of chromic catgut. The bowel was closed by interrupted stitches of sea-island cotton and a drain was placed in the pelvis. The patient made an uneventful recovery.

T. R. WHIPHAM.

Congenital facial hemiatrophy, with malformation of the ear and hypoplasia of the sterno-mastoid (*Journ. de méd. de Bordeaux*, 1914, LXXXV, p. 10).—**Rocher and Boissérie-Lacroix**.—A boy, aged 5 years, in addition to right facial hemiatrophy showed marked atrophy of the right pinna with its lobule adherent to the parotid region. There was atrophy of the right mastoid process and the right sterno-mastoid was one third the size of the left. There was no torticollis. The right inferior maxilla also showed marked atrophy. There was considerable impairment of hearing in the right ear, only sounds transmitted through the skull being faintly heard, which showed that a rudimentary labyrinth existed.

J. D. ROLLESTON.

Two cases of multiple suppurative periostitis simulating acute rheumatism (*Austral. Med. Journ.*, 1913, II, p. 1281).—**W. E. Tulloh** describes two cases in boys, aged 9 and 14 years respectively, in whom the onset was sudden, there were no previous illness, no rigors, no previous septic trouble, disappearance of pain after incision and improvement of the local condition, swelling of several joints but no suppuration, with tendency of the pain to shift from joint to joint, and no epiphyseal trouble. The first case recovered, but the second died of septicæmia. The ankle and the left and right tibiæ were affected in the boy of nine, and the right thigh, knee, and elbows in the other case.

F. R. B. ATKINSON.

A unique case of congenital scoliosis (*Arch. of Pediat.*, 1913, xxx, p. 276).—**J. Fraser** describes a case of a child, aged 1½ years, showing incomplete seventh and eighth dorsal vertebræ. Upon the right side there were half vertebræ and each half was wedge-shaped. Upon the left side the two vertebræ were fused into a single wedge-shaped bone. The last dorsal vertebra was divided into two halves by a mesial division. The first three lumbar vertebræ were incomplete; the right halves were present; upon the left side they were separate bones. Upon the left side there were thirteen ribs. The ribs of the left side, corresponding to the seventh, eighth, and ninth dorsal

vertebræ, were fused about one inch from the side of the vertebral column into a single broad rib, and this rib articulated with the vertebral column by two short processes.

F. R. B. ATKINSON.

Spondylitis infectiosa ('*Arch. f. Kinderheilk.*,' 1913, LXII, p. 43).—**E. Reye**.—A female infant, aged $6\frac{1}{2}$ weeks, was admitted to hospital moribund. The necropsy showed an acute purulent spondylitis caused by the *Staphylococcus aureus*, which had led to destruction of the sixth dorsal vertebra, gibbus formation, compression of the spinal cord and infection of the right pleura. Infection had probably taken place through the digestive tract, as the mother had continued to nurse the child in spite of purulent mastitis, which had occurred on the fifth day after the child's birth and involved first the one and then the other breast. In an editorial note **Baginsky** alludes to a fatal case of multiple furunculosis in an infant who had been nursed by a mother with purulent mastitis.

J. D. ROLLESTON.

The clinical symptoms of surgical scarlet fever ('*Monatsschr. f. Kinderheilk.*,' 1913, XII, p. 233).—**H. Hans** records seventeen cases in children aged from ten months to eight years. Seven followed resection of rib for empyema, one operation for hernia, and the rest burns and various wounds. The onset was not characteristic. In several cases the temperature was already raised. In only a small number did vomiting occur. In some cases the eruption started from the neighbourhood of the wound, as did also the subsequent desquamation. The characteristic injection of palate, uvula and tonsils was absent. Follicular deposit on the tonsils was never seen. The wounds all healed *per primam* and did not appear to be affected by the attack of scarlet fever. All the cases ran a mild and uncomplicated course, which Hans attributes to infection with an attenuated virus.

J. D. ROLLESTON.

Bilateral empyema thoracis treated by successive rib resection ('*Arch. of Ped.*,' 1913, xxx, p. 684).—**A. Zingher**.—A child, aged $6\frac{1}{2}$ years, with pus in the left chest, had part of the eighth rib resected and drainage-tubes inserted. Three weeks afterwards pus in the right chest necessitated two rib resections on that side. Recovery took place.

F. R. B. ATKINSON.

A case of traumatic spinous meningocele combined with pachymeningitis hæmorrhagica interna ('*Jahrb. f. Kinderheilk.*,' 1913, LXXVI, p. 160).—**R. Schindler** describes a case in a girl, aged 13 months. Lumbar puncture withdrew normal fluid, markedly increased in quantity by pressure of the tumour. Section revealed internal pachymeningitis hæmorrhagica in addition to the meningocele, which the author considers was due to increased intracranial pressure as a result of the pachymeningitis. The child was treated by frequent lumbar punctures, which are of therapeutic efficacy.

F. R. B. ATKINSON.

Wound of the meninges in the lumbo-sacral region ('*Semana Med.*,' 1912, XIX, p. 553).—**Rocco**.—The patient was a boy, aged 11 years, who had received a knife wound in the lumbo-sacral region. The fourth day after the injury clear liquid was seen to be issuing from the wound, which proved to be the cerebro-spinal fluid. The child was placed in the ventral decubitus, the pelvis was raised, and in a few days the wound was quite dry.

He was kept in the position for about a fortnight, by which time cicatrization was complete.
M. D. EDER.

Hydronephrosis in a child (*'Urol. and Cut. Review,'* 1913, xvii, p. 663).—**Kate W. Baldwin** operated on a boy, aged 2 years, for congenital cystic kidney, whose symptoms had first appeared shortly after circumcision at the age of three months. The right kidney, with a cyst containing 2500 c.c. of fluid, was removed. The kidney was a mere shell, not half an inch in thickness at its thickest part. When the child was seen again, at the age of four years, he was in good health, and his development seemed normal in every way.
J. D. ROLLESTON.

Sarcoma of the bladder (*'Journ. de Méd. de Bordeaux,'* 1914, xxxv, p. 144).—**Bégouin** removed a sarcoma from the bladder of a girl, aged 3 $\frac{1}{4}$ years, but death occurred some months after.
F. R. B. ATKINSON.

Congenital stricture of the prostatic urethra (*'Journ. Amer. Med. Assoc.,'* 1913, lxi, p. 244).—**W. H. Jordan** states that congenital stricture of the urethra is described as occurring at three different places—at the meatus, at the outer limit of the fossa navicularis, and at the membranous portion of the urethra. He here reports the case of an infant in whom he found a stricture in the prostatic portion of the urethra, which with difficulty admitted a small probe. It was noticed that the child never urinated and that the urine dripped from the meatus. The continued passage of a probe did not improve the condition, and the kidneys were felt to be gradually increasing in size. The child died in the seventh week of uræmic convulsions. At the necropsy both kidneys were found to be enlarged; the ureters were large and sacculated, especially the right, and the bladder was small, hard, and about the size of a large olive. In the urethra there was a stricture a quarter of an inch in length in the prostatic portion. The kidneys were cystic and showed chronic diffuse nephritis.
T. R. WHIPHAM.

Voluminous sarcoma of the testicle in a child, aged 25 months (*'Gaz. Med. des Sci. méd. de Bordeaux,'* 1913, xxxv, p. 32).—**E. Petit de la Villéon**.—The case was of interest (1) from the size of the tumour, which weighed 540 grm., and (2) from the ætiological importance of trauma. On two occasions, first at fourteen months and again at twenty-four months, the child had fallen astride on the rail of its cot and bruised its right testis. The tumour was successfully removed; the healthy left testis was left *in situ*. The prognosis was bad owing to the probability of metastasis.
J. D. ROLLESTON.

Circumcision: the advantages of a modified operation (*'Med. Press,'* 1913, xcvi, p. 669).—**T. H. Kellock** protests against the mutilation of children by the operation of circumcision as usually performed. The prepuce is the natural covering of the glans penis, protects it from irritation or injury and preserves its sensory faculties. The most frequent condition for which circumcision is advised is difficulty in micturition, pain during the act, and all the ills which rightly or wrongly have been attributed to the dysuria. In such cases circumcision is quite unnecessary. The difficulty in micturition is very often caused by a partial blocking of the urinary meatus by preputial

adhesions which can be easily separated, but more frequently the cause of dysuria is a pin-hole orifice of the urethra, the remedy for which is a very simple matter. If the prepuce is adherent and not unduly long and its orifice is small, a small incision about a quarter of an inch in length through both the skin and mucous membrane on the dorsum and one suture is all that is necessary to allow of retraction. In cases where the prepuce is unduly long a modified operation is advocated. After separating any adhesions round the urethral opening the prepuce that projects beyond the tip of the glans is cut off in a slightly slanting direction parallel with the line of the corona; both the skin and mucous membrane are divided at the same level, and no more of the latter than of the former is removed. Then a small incision, including both skin and mucous membrane, about an eighth of an inch long, is made on the dorsum, which converts the round opening into a slightly pear-shaped one. In babies this is all that is needed, but in older children four horse-hair sutures are put in and tied tightly so that they drop out by themselves. A little tincture of iodine may be painted over the wound, but no application or dressing at all seems as good treatment as any. A small apron of gutta-percha tissue will prevent the diaper sticking to the wound, and more rapid healing takes place in this way than with any form of dressing.

T. R. WHIPHAM.

Reviews.

THE DISEASES OF CHILDREN. By HENRY ENOS TULEY, M.D., late Professor of Obstetrics, University of Louisville, etc. Second revised edition, 1913. London: Henry Kimpton. Glasgow: Alexander Stenhouse. Pp. 684, with 106 engravings and 3 coloured plates. Price 24s. net.

THIS is an American text-book of the type with which by now we have become familiar. It deals with the subject of children's diseases in a clear, precise and practical manner, and the author has wisely refrained from overburdening it with too much theory, having kept the needs of the general practitioner and the student strictly in view. Chapters on the eye, the ear, nose and throat, and the skin have been included and greatly add to the usefulness of the work. The text is embellished with 106 illustrations and temperature charts, of which 28 depict clinical and pathological subjects in a satisfactory manner. There are also 3 coloured plates illustrating Koplik's spots, the life-cycle of the *Plasmodium vivax*, or parasite of benign tertian malarial fever, and the differences in appearance between tonsillar diphtheria and follicular tonsillitis. These, however, like several of the smaller illustrations, are not original.

Although this is the second edition and the book has been partly rewritten, it is still very unequal, the later part being incomplete in many respects. The chapters on the newborn, infant feeding, diseases of the digestive system and the special subjects already referred to are perhaps the best, and mention must be made of the supplementary appendix, which contains several complicated methods for the modification of milk. It is interesting to note that the author favours operation in cases of hypertrophic stenosis of the pylorus as soon as the condition is diagnosed, and that, on

account of its being a good culture-medium for bacteria, he considers it inadvisable to give albumin-water in acute dyspeptic or diarrhœal diseases in children. Dr. Tuley's practice is to use dextrinised barley-water in the first instance in all such cases. For the same reason an exclusive milk diet in typhoid fever is not recommended. Diluted milk or butter-milk and dextrinised cereal decoctions, which may be flavoured if necessary, are to be preferred, and milk should be withheld if diarrhœa occurs.

In the chapter on general diseases there is a full description of the various forms of malaria by Dr. W. B. Burns and a section on pellagra. Diabetes mellitus is mentioned, but there is no account of diabetes insipidus or of rheumatoid arthritis of children. Chorea appears under the functional nervous disorders, and in this disease it is apparently the author's custom to push treatment with arsenic until the physiological effects of the drug are obtained. He records one case in which a severe neuritis was produced. Under the nervous system are also included the muscular dystrophies, which would have been dealt with better in a separate chapter together with disorders of the bones. As it is no account is given of such conditions as chondroplasia and osteogenesis imperfecta, neither is amyotonia congenita mentioned. In the chapter on diseases of the blood the account of leukæmia is confusing. The myeloid form is described under lymphatic leukæmia, and no stress is laid upon its excessive rarity in childhood. With the exception of icterus neonatorum no mention is made of jaundice, and reference to infection of the peritoneum and joints by the pneumococcus has been omitted. The subject of idiocy, too, is inadequately dealt with. Cretinism is described under diseases of the lymphatic glands, and Mongolian idiocy is there incidentally mentioned, but that is all. In the same way there is only a brief reference to infantilism, and precocious development is ignored. In diseases of the genito-urinary system we could find no account of congenital cystic degeneration of the kidneys, and under the treatment of vulvo-vaginitis we are told that "because of the possibility of involvement of the scrotum and contents in male infants the child should be kept in bed entirely during the acute stage."

We might mention other omissions of less importance and criticise the arrangements of some of the subjects; for instance, we should have liked to see amongst others separate descriptions of various disorders, such as tetany, instead of a passing reference which escapes mention in the index, but the foregoing will serve to show the kind of inequality which the book presents.

Throughout the work we were struck by the numerous incongruities and errors in prescription-writing and in the Latin. In some of the prescriptions the ingredients are given in English, in some in Latin, and in others in a mixture of the two. As examples we may quote the following: "R. Cocaine muriat gr. x; ac. boracic saturated sol.; alcohol aa, 5j. M. Politzeration should be performed after paracentesis" (an instruction which would probably be unintelligible to the patient's nurse and impossible for her to carry out). "R. Tartar emetic; powd. ipecac aa. gr. 1-100; sacch. lactis q.s. M. Ft. tablet No. 1." Further, in many the preposition "ad." is omitted before the quantity of the vehicle to be dispensed. In speaking of drugs the nominative and genitive cases are frequently used indiscriminately; thus we find "sodium chloridi," "syr. ipecacuhana," "cerii oxalatis" (where it should have been "oxalas"). The genitive "alcoholis," which is sometimes used, we must also object to; alcohol is an Arabic, not a Latin word. Hybrid terms such as "pulv. calamine prep.," "tincture ferri chloridi," "pleurisy sicca" and "anemia pseudoleukemic infantum" like-

wise occur. Again, "iodini" and "ac. boracici" are not correct terms, neither is "charta" the Latin for "cachet," as we suppose the writer intends. Then we find "laurecerasi," "felix mas," "sarcini," "ferri reducti," "tenia tonsurans," "tenia mediocanollata," "hydrargiri," "ferri chloriri," and "in tabulas" (which should be the ablative). Some of these may be misprints (although otherwise there are very few mistakes in the text), but such an excuse cannot be urged for "cancarem oris," which is repeated in the text and also appears in the index (in fact the word "cancrum" never occurs), and the same applies to "Pyer's patches" and "Hirschprung's disease." In French words the accents are for the most part omitted, *e. g.* "rales," "perleche," "tache cerebrale," and "rötheln" is spelt without the umlaut.

In spite of what has been said the book has many good points, and the fact that a second edition has been called for proves its usefulness, though it is a pity that its excellence should have been marred by the omissions and errors to which we have drawn attention. The printing and general get-up of the book are in every way admirable, and the illustrations are well reproduced. There is a fairly full index, but it is not complete.

T. R. W.

THE MEDICAL WHO'S WHO, 1914. London: The London and Counties Press Association. Price 10s. 6d. net.

The increasing popularity of 'The Medical Who's Who,' which is now in the third year of its existence, is shown by the present issue being considerably larger than its two predecessors. A good number of names, celebrated and obscure, are still missing, but, in spite of its incompleteness, the work contains a great amount of useful and entertaining information not obtainable elsewhere. An alphabetical list of the towns with the names of resident practitioners is appended in this new edition.

J. D. R.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. Vol. xxvi, 1913.

WE have received a copy of this useful publication, which is too well known to require any introduction. The present issue, which deals with advances in pharmaceutical chemistry and therapeutics up to the end of 1912, maintains a high standard equal to that of former years. The introductory article is on lecithin, and much valuable information is given about this preparation. The interest taken in salvarsan is indicated by the fact that the bibliography in relation to this drug extends to over seven pages. In an appendix Prof. Heinz writes on "The Assay and Standardisation of Digitalis Preparations." We feel sure that medical men will, as in the past, be able to glean much that is of value from its pages. We understand that a limited number of copies may be obtained gratis on application to the London office, 66, Crutched Friars, E.C.

J. A.

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Original Articles.

PAROXYSMAL TACHYCARDIA IN A CHILD AGED $2\frac{3}{4}$
YEARS.*

By ROBERT HUTCHISON, M.D., F.R.C.P.,

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Great Ormond Street; and*

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First Assistant in the Cardiac Department, London Hospital.

W. M—, aged $2\frac{3}{4}$ years, was admitted to the London Hospital on June the 6th, 1913, under the care of Dr. Robert Hutchison.

History.—Ten days before admission the child was drowsy and fretful during the afternoon. In the evening he complained that he had fallen down. No sign of injury was found, but the parents then noticed a throbbing in his neck. He vomited four or five times during that evening and looked exhausted. After a night's sound sleep he seemed brighter, though the throbbing persisted. He complained while climbing some steps that his chest hurt him. At night he seemed very tired, and the parents noticed that the heart was beating very rapidly. During the next six days he was kept in bed by the doctor's orders. He was cross, seemed half conscious at times, and did not get proper sleep. The throbbing in the neck and chest continued. On the seventh day of the illness the face became

* A paper read before the Medical Section of the Royal Society of Medicine on February the 24th, 1914.

swollen, especially around the eyes ; this continued until admission. He never appeared blue, and no swelling of the legs was noticed. On the ninth day of the illness he passed scarcely any urine. He was only half conscious, and seemed "like a dying child." On the tenth day of the illness he was sent to hospital with a suggested diagnosis of meningitis.

Previous health.—The parents, who are healthy, were married in 1909. The patient was born on August the 29th, 1910, and was breast-fed for ten months. He had been perfectly well until the present illness. He had not suffered from any infective disease except an occasional cold, nor from any aural or nasal discharge. A second child was born in 1912 and is healthy. There were no miscarriages.

Condition on admission.—The child was well built and nourished. He seemed content, and lay flat without distress. The face was puffy, especially around the eyes. Acute nephritis was first suggested, but the scanty urine, examined twice, contained no albumin. The heart was very rapid, "more than 160 per minute by auscultation." There was marked and rapid pulsation in the neck. The heart-sounds were of a tick-tack character and unaccompanied by murmurs. The respirations were 30 per minute; there was no objective shortness of breath. The liver extended three fingers' breadth below the right costal margin, and it pulsated. The patient slept well and his physical condition remained the same, except that pitting of the ankles was noticed for the first time on the eleventh day of the illness.

Only a few ounces of urine were passed.

On the twelfth day of the illness, the third after admission, the pulse was found to be 80 per minute and the heart-sounds normal. The liver was only one finger's breadth below the costal margin, and the œdema had disappeared. About 30 oz. of urine were passed during the next twenty-four hours.

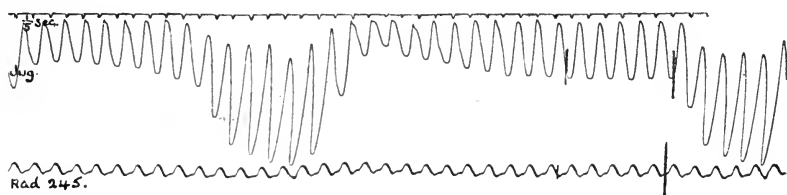
Second attack.—On the morning of June the 11th, three days after cessation of the first attack, the child was allowed to sit up in bed. Shortly afterwards it was noticed that the pulse had again become very rapid. The liver extended 1 in. below the costal margin and pulsated. The first polygraphic record was taken four hours later and showed a regular radial pulse of 245 per minute. The jugular tracing showed a single large wave at the same rate (Fig. 1).

An electro-cardiogram presented the same appearances as that in subsequent attacks. Five hours after the beginning of the attack the child seemed comfortable and happy. There was neither

cyanosis or œdema. Rapid pulsation was visible in the neck and in the third and fourth left intercostal spaces over the heart. The apex-beat was in the fourth space, $3\frac{1}{2}$ in. from the middle line. The area of cardiac dullness extended above to the third rib, to the right $\frac{1}{2}$ in., and to the left $3\frac{1}{2}$ in. from the middle line. The heart-sounds were accompanied by murmurs. The respirations were twenty per minute and deeper than before the attack. There were no abnormal signs in the lungs. The liver extended 1 in. below the right costal margin. The spleen was not felt. There was neither œdema nor ascites. Twelve hours after the onset the physical signs were the same.

A photographic tracing showed a pulse-rate of 236 per minute. The child slept well, and the pulse was still uncountable at the wrist before breakfast on the next morning. During breakfast the child

FIG. 1.



vomited, and it was then found that the pulse was 95 per minute. A few minutes later a polygraphic tracing showed a pulse-rate of 84 and a normal sinus arrhythmia.

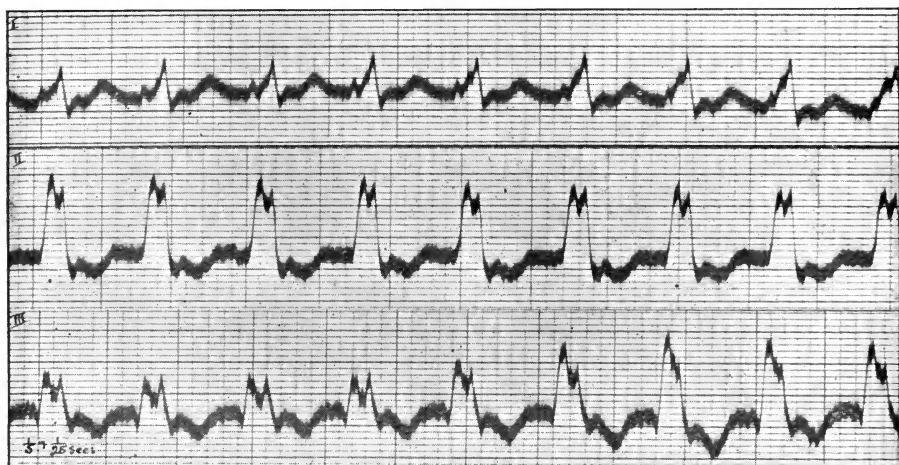
An electro-cardiogram taken in the morning showed a sinus arrhythmia with "escape of the ventricle." The duration of the second attack was twenty hours. During the next ten days the child was perfectly well. The pulse-rate was 64 to 80 per minute, and tracings showed merely a sinus arrhythmia. The systolic blood-pressure was 100 to 110 mm. Hg. (Riva-Rocci sphygmomanometer). The respirations were 20 per minute. There were no abnormal physical signs in the heart. The apex-beat now measured 3 in., instead of $3\frac{1}{2}$ in., from the middle line. The liver was just palpable.

On June the 26th, 1913, the patient was discharged, and he remained quite well until September the 22nd, 1913.

Third attack.—On September the 22nd, 1913, the third attack began. Again the parents noticed throbbing in the neck. The child said he felt sick. Radial pulse tracings showed a rate of 215 per minute. Electro-cardiograms were of the same character as

those taken during previous attacks (Fig. 2). During the night the child vomited, but this did not terminate the attack. At 8 a.m. on September the 23rd the radial pulse was found to be 118 and at 11 a.m. was 105. An electro-cardiogram showed the normal rhythm. The third attack had lasted about twelve hours. The physical signs were the same as those during the attack. The Wassermann reaction in the blood-serum, made on September the 30th, was negative. The child was discharged, and remained well until October the 3rd, 1913.

FIG. 2.



Fourth attack.—On October the 3rd, he was again admitted, four hours after the onset of the attack. The pulse-rate was 213, the blood-pressure 85 to 90 mm. Hg. The child appeared cheerful, and no abnormal signs were seen beyond the rapid pulsation in the neck and præcordia. The liver was not enlarged. On October the 4th, the pulse-rate was 212 per minute, and the liver was $1\frac{1}{4}$ in. below the costal margin. On October the 5th the pulse-rate was 227 at noon. There were no symptoms of distress. In the evening, immediately after defæcation, the attack ceased, and the pulse was found to be 120 per minute. The fourth attack had lasted forty-eight hours. Three hours later the pulse-rate was 100, sinus arrhythmia was well marked, and a continuous tracing for ten minutes showed no premature contractions or other abnormal rhythm. The liver was just palpable. For another week the child remained in

hospital. The pulse-rate was 70 to 80 per minute. He was discharged well on October the 12th, 1913.

There had been no more attacks when he was last seen on February the 21st, 1914, and he appeared quite well.

REMARKS.

This case of paroxysmal tachycardia appears to be the youngest yet recorded. The oedema of the face which appeared during the long paroxysm produced a superficial resemblance to acute nephritis. In cases where no cause is found for an acute heart failure in young children the possibility of paroxysmal tachycardia should be borne in mind.

The prominent pulsation in the neck, often described as carotid, is probably always venous. The large waves shown in the tracing from the neck are too high to be due to carotid pulsation, when the radial beats accompanying them are so small. Moreover, the waves in question do not coincide with the expected position of the carotid (c) wave. They are due to contraction of the auricle during ventricular systole, and a consequent retropulsion of blood into the jugular veins.

The electro-cardiogram is difficult to understand, and no interpretation is put forward. It is obvious that the rhythm of the heart is entirely altered in character during an attack; the change is not merely one of rate. Premature contractions were never seen in this patient during the frequent observations and tracings. Pulsus alternans was never recorded.

OTHER RECORDED CASES.

Paroxysmal tachycardia dates from childhood in a certain proportion of cases. Accounts of actual attacks in childhood are rare.

Herringham's case (3) was a girl, aged 11 years, who showed seven attacks within ten months. They had been present since the age of five. The duration of the paroxysms varied from one and a half to thirteen days. The rate was 200 to 250. Distress was slight. The liver enlarged and once pulsated. The urine was scanty. Oedema never occurred.

Buckland's case (1) was also a girl, aged 11 years, with a similar history of onset about the age of five. The longest attack lasted five days.

Merklen (5) describes paroxysms in a girl, aged 13 years, lasting

eight days, two days, and twelve hours. On the fifth day of the longest attack the liver was enlarged and hæmorrhagic sputum was expectorated. The pulse-rate was 220.

John Hay (2) records a case in a delicate boy, aged 6 years. The onset and offset were not observed, but it is an undoubted case of paroxysmal tachycardia, and excellent polygraphic records are given.

Hume (4) has described attacks in a girl, aged 6 years, during the course of a severe attack of diphtheria.

On the forty-first and on the fifty-first days of the illness, while the child was vomiting and in a grave, collapsed condition, polygraphic records showed the occurrence of short paroxysms of tachycardia. These did not return, and the patient recovered and left the hospital eleven weeks later.

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THE FOOD VALUE REQUIRED BY GROWING GIRLS, AGED FOUR TO FIFTEEN. RESULT OF INVESTIGATIONS CARRIED ON FOR SEVENTEEN YEARS, WITH ANALYSES AND COMMENTS.

By J. GORDON SHARP, M.D.Edin.

(Continued from p. 214.)

WEIGHT AND HEIGHT OF CHILDREN UNDER CARE OF WRITER.

Comparison with British, Jewish, and Quetelet's Tables.

In preparing the following tables the writer has set down (1) the average height and weight observed in the large number of girls from time to time under his care from ages seven to fifteen. (2) The highest figures met with at the same ages. (3) The lowest figures met with among the numbers examined. These are compared with the British Association, Belgian (Quetelet's), and the Jewish averages at the same ages. For the Jewish figures the writer is

indebted to the writings of Mr. William Hall, M.R.C.S., of Leeds, who has examined many thousands of children of both Jewish and English nationality.

The Jewish figures are by no means accidental, for they are taken from several thousands of cases. The writer's cases are likewise not unique for they are being confirmed by school officers. It will be remarked how much the Jewish children exceed in weight and height the English child. The question then is: Do these figures portend evil to the English child? The answer is in the negative. Although there can be no doubt that many children are underfed, a large number of children who get as much food as they can deal with are under weight and height according to the abnormally high standard, and yet they are able to resist death and disease, and are able to reach adult life, do laborious work, and finally live to attain the allotted span of life.

One hears to-day many deprecatory remarks concerning the weight and stature of the English child, and it must be admitted if the standard of the British Association be accepted there is ground for concern, but the writer has never yet in any north of England community, town or country, met with children who came up to this standard, and he has some difficulty in understanding how the standard came to be instituted. The only children who do come up to it, or near to it, are the Jewish children. In the writer's experience, the *Belgian tables* of Quetelet more nearly approach the working-class average of the north of England.

Age 7.

Weight.

Average in stones and pounds $3\cdot1\frac{1}{2}$ = $43\frac{1}{2}$ lb. = 19·74 kgrm.

Highest " " " $3\cdot11$

Lowest " " " $2\cdot7\frac{1}{2}$

British average " " $3\cdot5\frac{1}{2}$ or 4 lb. above writer's.

Quetelet's " " $2\cdot11$ or $4\frac{1}{2}$ lb. below "

Jewish " " $3\cdot7$ or $5\frac{1}{2}$ lb. above "

Height.

Average in feet and inches $3\cdot8\frac{1}{2}$ = $44\frac{1}{2}$ in. = 1130 mm.

Highest " " " $4\cdot1$

Lowest " " " $2\cdot7\frac{1}{2}$

British average " " $3\cdot8\frac{1}{2}$ or same as writer's.

Quetelet's " " $3\cdot6$ or $2\frac{1}{2}$ in. below writer's.

Jewish " " $3\cdot9$ or 1 in. above "

Age 8.

Weight.

Average in stones and pounds	3·1	= 43 lb. = 19·50 kgrm.
Highest	3·13	
Lowest	2·10	
British average	3·10	or 9 lb. above writer's.
Quetelet's	2·13	or 2 lb. below "
Jewish	3·11½	or 10½ lb. above "

Height.

Average in feet and inches	3·9½	= 45½ in. = 1155 mm.
Highest	4·3½	
Lowest	3·5½	
British average	3·10½	or 1 in. above writer's.
Quetelet's	3·9	or ½ in. below "
Jewish	3·11	or 1½ in. above "

Age 9.

Weight.

Average in stones and pounds	3·9½	= 51½ lb. = 23·35 kgrm.
Highest	4·5	
Lowest	2·13	
British average	3·13½	or 4½ lb. above writer's.
Quetelet's	3·4	or 5½ lb. below "
Jewish	4·3	or 7½ lb. above "

Height.

Average in feet and inches	3·11	= 47 in. = 1193 mm.
Highest	4·2	
Lowest	3·7½	
British average	4·0¾	or 3¾ in. above writer's.
Quetelet's	3·11	equal to writer's.
Jewish	4·1½	or 4½ in. above writer's.

Age 10.

Weight.

Average in stones and pounds	3·11	= 53 lb. = 24·00 kgrm.
Highest	4·6½	
Lowest	3·1½	
British average	4·6	or 7 lb. above writer's.
Quetelet's	3·8	or 3 lb. below "
Jewish	4·8	or 12 lb. above "

Height.

Average in feet and inches	$4\cdot1\frac{1}{2}$	=	$49\frac{1}{2}$ in.	=	1257 mm.
Highest	"	"	"	4·6	
Lowest	"	"	"	$3\cdot8\frac{1}{2}$	
British average	"	"	"	4·3	or $1\frac{1}{2}$ in. above writer's.
Quetelet's	"	"	"	4·1	or $\frac{1}{2}$ in. below "
Jewish	"	"	"	$4\cdot4\frac{1}{2}$	or 3 in. above "

Age 11.

Weight.

Average in stones and pounds	4·2	=	58 lb.	=	26·30 kgrm.
Highest	"	"	"	$5\cdot5\frac{1}{2}$	
Lowest	"	"	"	3·8	
British average	"	"	"	4·12	or 10 lb. above writer's.
Quetelet's	"	"	"	4·0	or 2 lb. below "
Jewish	"	"	"	4·11	or 9 lb. above "

Height.

Average in feet and inches	$4\cdot3\frac{1}{2}$	=	$51\frac{1}{2}$ in.	=	1301 mm.
Highest	"	"	"	4·9	
Lowest	"	"	"	3·11	
British average	"	"	"	4·5	or $1\frac{1}{2}$ in. above writer's.
Quetelet's	"	"	"	4·2	or $1\frac{1}{2}$ in. below "
Jewish	"	"	"	$4\cdot4\frac{1}{2}$	or 1 in. above "

Age 12.

Weight.

Average in stones and pounds	4·5	=	61 lb.	=	27·66 kgrm.
Highest	"	"	"	5·12	
Lowest	"	"	"	$3\cdot1\frac{1}{2}$	
British average	"	"	"	$5\cdot6\frac{1}{2}$	or $15\frac{1}{2}$ lb. above writer's.
Quetelet's	"	"	"	4·7	or 2 lb. " "
Jewish	"	"	"	5·6	or 15 lb. " "

Height.

Average in feet and inches	4·3	=	51 in.	=	1275 mm.
Highest	"	"	"	$4\cdot8\frac{1}{2}$	
Lowest	"	"	"	$3\cdot7\frac{1}{2}$	
British average	"	"	"	$4\cdot7\frac{1}{2}$	or $4\frac{1}{2}$ in. above writer's.
Quetelet's	"	"	"	4·4	or 1 in. " "
Jewish	"	"	"	4·7	or 4 in. " "

*Age 13.**Weight.*

Average in stones and pounds	4.12 $\frac{3}{4}$	= 60 $\frac{3}{4}$ lb. = 31.18 kgrm.
Highest	„ „ „	7.1
Lowest	„ „ „	3.5
British average	„ „	6.3 or 18 $\frac{1}{4}$ lb. above writer's.
Quetelet's	„ „ „	5.1 or 2 $\frac{1}{4}$ lb. „ „

Height.

Average in feet and inches	4.5	= 53 in. = 1346 mm.
Highest	„ „ „	4.11
Lowest	„ „ „	3.9
British average	„ „	4.9 $\frac{3}{4}$ or 4 $\frac{3}{4}$ in. above writer's.
Quetelet's	„ „ „	4.7 or 2 in. „ „

The Jewish figures are not available after twelve years of age, but it will be observed that the high averages of these children are being gradually lowered as one approaches the twelfth year, when they more nearly equal the high British average.

*Age 14.**Weight.*

Average in stones and pounds	5.9 $\frac{3}{4}$	= 79 $\frac{3}{4}$ lb. = 36.17 kgrm.
Highest	„ „ „	7.12
Lowest	„ „ „	3.9
British average	„ „	6.12 $\frac{3}{4}$ or 17 lb. above writer's.
Quetelet's	„ „ „	5.9 or $\frac{3}{4}$ lb. below „

Height.

Average in feet and inches	4.6 $\frac{1}{2}$	= 54 $\frac{1}{2}$ in. = 1384 mm.
Highest	„ „ „	5.1 $\frac{1}{2}$
Lowest	„ „ „	4.0
British average	„ „	4.11 $\frac{3}{4}$ or 5 $\frac{1}{4}$ in. above writer's.
Quetelet's	„ „ „	4.10 or 3 $\frac{1}{2}$ in. „ „

*Age 15.**Weight.*

Average in stones and pounds	6.3 $\frac{1}{2}$	= 91 lb. = 39.80 kgrm.
Highest	„ „ „	8.0
Lowest	„ „ „	4.4
British average	„ „	7.8 $\frac{1}{4}$ or 16 $\frac{3}{4}$ lb. above writer's.
Quetelet's	„ „ „	6.4 or $\frac{1}{2}$ lb. „ „

Height.

Average in feet and inches	4·9	= 57 in. = 1448 mm.
Highest " " "	5·3	
Lowest " " "	4·2	
British average " "	5·1	or 6 in. above writer's.
Quetelet's " " "	4·10	or 1 in. " "

Attention may be called to the fact of the gradual lowering of the averages of both weight and height as the children advance in years. In the early years the children under the writer's care did not compare so unfavourably with either the British or Quetelet's tables, but later on the comparisons were most unfavourable, showing the great advantage which the well-fed, well-cared-for infant and young child possess over the neglected child, and it would appear as if the loss sustained in these very tender years can never be quite made up, even under the best future conditions of life.

Advantages of the dietary with its therapeutic significance.—The protein content, which is comparatively large, depends chiefly on the meat, wheaten flour, beans, peas, and milk and oatmeal. But important as these may be, the vegetables are almost as important from another side, namely because of their organic-phosphorus content or lipoid bodies. Without the presence of a due proportion of these in the best of dietaries the proteins, fats and carbohydrates could not be used to the best advantage in building up the tissues. Their presence is probably to stimulate or to set into activity the ferments of the glands of the organism so that it can deal with the food-stuffs supplied to it. Herein may lie the secret of the health of one child and the ill-health of another child.

Previous to the adoption of the dietary now under review the fat value for each child was less by half an ounce daily (15 grm.) and this was considered too low, for in the winter-time cases of chilblains were often met with. Since the addition of the extra half ounce of margarine cases of this troublesome affection are rare even in the severest weather. During a recent medical examination by a Government inspector in the middle of a spell of cold wintry weather lasting some weeks, only one child was found to be suffering from a milk attack of unbroken chilblains. This experience points to the importance of fat in the diet of the young growing child.

ACUTE *BACILLUS COLI* INFECTION OF THE URINARY TRACT IN CHILDREN. FIVE TYPES OF CLINICAL MANIFESTATIONS.

By RONALD G. GORDON, M.D., B.Sc., M.R.C.P.Ed.,
Late House-Physician at Paddington Green Hospital for Sick Children.

It is a well-recognised fact that the symptoms of acute *coli*-uria in children are by no means always associated with the urinary tract, and that the manifestations may be extremely misleading, pointing, as they often do, to some disturbance totally unconnected with the real seat of disease. Thus, out of 60 cases described by Jeffreys, (1) 37 were brought to hospital for bladder trouble, 3 for diarrhœa and vomiting, 9 for abdominal pain, 5 for meningeal symptoms, 4 for debility, while 2 had no symptoms.

Examination of a series of cases treated at Paddington Green Children's Hospital, and also of those published in the recent literature on the subject, showed that they could be arranged in five groups according as they presented :

(1) Symptoms of general feverish disorders, without any indication that one special system was affected.

(2) Cerebral symptoms.

(3) Pulmonary symptoms.

(4) Abdominal symptoms.

(5) Urinary symptoms.

As might be expected the largest group is No. 5, in which urinary symptoms are complained of; as a matter of fact, in the great majority of cases a very careful inquiry generally leads to a history of some trouble connected with the urinary system, though this may only be a peculiar smell of the water, or some brownish staining of the napkins. Unless the possibility of the existence of *coli*-uria is present in the mind of the physician, such minor signs may easily be missed.

(1) The first group includes those cases in which there are only general symptoms, though these may frequently be present in the other groups, along with the symptoms pointing to a special system.

Such symptoms occur somewhat as follows: A sudden onset of the illness associated with rigors, which Thomson (2) thinks is characteristic of an ascending infection as it is exceedingly rare in boys, and, indeed, except in the case of *coli*-uria, rare in children altogether, or with convulsions, or blueness and collapse. After the onset the

temperature rises quickly to 105° or 106° F., and if untreated will continue to swing with large variations, often falling or rising 6°—8° in a few hours.

Sometimes the chart simulates that of typhoid or even malaria, with regular intermissions, but it is noticeable that the child is not so ill as the severe fever would seem to indicate, and directly the temperature falls the child is ready to play. The pulse and respirations are usually quickened with the rise of temperature, but are not excessively rapid. The child is pale and drawn, though there may be a flush during pyrexial periods; he is irritable and restless, and he may have marked muscular tenderness. There may be no physical signs, and so nothing to draw attention to the urine.

The following case illustrates this type:

M. D—, girl, aged 5 years and 4 months. Sent to hospital for diagnosis. Six weeks previous to admission she had had slight pain and inflammation of the throat, adenoids having been recently removed. The temperature went up to 105° F. and had continued swinging ever since. Three days after the onset there was severe pain in the back lasting twelve hours. The bowels have been confined, the appetite very poor, and the child irritable and difficult to manage, requiring much coaxing.

On admission the child looked pale and ill, but nothing was found on examination until the urine was tested; this was acid, contained epithelial and pus-cells, and on cultivation yielded a pure culture of *Bacillus coli*.

After treatment with alkalis for two weeks the child was discharged without symptoms, though pus was still present in the urine.

(2) CEREBRAL CASES.

These often simulate intra-cranial disease, especially meningitis, and suffer from delirium, or may be somnolent or even comatose when they come under observation. The onset is often marked by convulsions, and there may be neck rigidity, strabismus, and, in rare instances, Kernig's sign. The extreme irritability and screaming attacks which are often present lend additional weight to the diagnosis of meningitis.

By far the best example of such a case was published by McCrae,(3) who has kindly permitted me to quote it.

Girl, aged 7½ months. Tended to be constipated but otherwise healthy and well nourished.

She was suddenly taken ill one evening, the temperature rising to 104° F. The next morning she was unconscious, the body extended and rigid. This latter condition lasted an hour and she was semi-conscious till the afternoon, when she had right-sided convulsions lasting three hours, with deviation of the eyes to the right. She was given pot. brom., gr. v, and chloral, gr. v, *per rectum*, and chloroform was administered for one hour, after which she slept for six hours. On waking the temperature was 100°, and her right arm and leg were paralysed though the face was not. In the next few days the paralysis passed off. She occasionally went very pale with blue lips while asleep, but became normal again when roused. Four days later the temperature rose to 104° without apparent cause, and for three weeks she had an intermittent temperature without rigors or fits, but on five occasions she became unconscious, in the worst of which the temperature was 104°, pulse 200, respirations rapid and shallow. She was slightly rigid, and remained so for six hours, when she went to sleep. On waking she was ready to play. After some other less severe attacks the nurse noticed a brown stain on the napkins from the urine. This was examined and found to be acid, to contain albumin, pus, and *Bacillus coli*. Nothing else was present on physical examination, and she was given urotropin, gr. i, and pot. cit., gr. v, four-hourly and made a good recovery. Three and a half years later she was a healthy child, with perfect intelligence, and had never had any cerebral signs since.

(3) PULMONARY CASES.

Some cases present symptoms suggestive of the onset of pneumonia, having marked tachypnœa accompanying the high fever and malaise. As a rule respiratory distress is absent, though cases do occur in which there is some expiratory difficulty. Physical signs are absent, though a slight congestion with impairment of note and occasional *râles* may still further confuse the issue. Such cases do not, of course, follow the usual course of a pneumonia, and, what may be taken for the signs of an early consolidation, do not develop.

The following case is illustrative:

H. S—, girl, aged 11 months. Admitted complaining of cough, difficulty in breathing, and twitching of the eyes. Two days previously vomited during the night; the breathing became rapid and a cough developed.

The previous health and family history were satisfactory.

On examination, the child had all the appearance of a pneumonia,

with inverted breathing, etc., but beyond a few *râles* nothing was found in the lungs, and there was no consolidation. There were no other physical signs, but the urine was acid, contained a trace of albumin, and pus and bacilli were present. There was a leucocytosis of 14,000.

The child was given pot. cit. and ammon. acetate, and the temperature continued high, and swinging for three days, after which the child improved greatly; one attack of diarrhœa hindered progress for a time, but on the eighteenth day she was discharged well though there was still a trace of pus in the urine.

(4) ABDOMINAL CASES.

The onset in these cases may be attended by severe colicky pains in the abdomen, ascribed by Porter and Fleischner (4) to ulceration of the ureters. There is vomiting and obstinate constipation, or in some cases diarrhœa. The appetite is lost early and in a few cases jaundice is seen. With treatment of the urinary condition, the abdominal symptoms disappear. Such a case is the following :

M. R—, girl, aged 11 months. Admitted to hospital for diarrhœa and vomiting which had been continuous for the last ten days. The child had been weaned since the commencement of the illness, and she has got progressively weaker. She has vomited about half an hour after each meal, and has been irritable and feverish. She had fits of screaming, attributed to colic.

On admission, temperature was 104° F. and pulse 140. The child was very rickety, but nothing was discovered on physical examination. The urine was acid, contained albumin, pus and bacilli, which on cultivation were found to be pure *B. coli*.

The child was put on pot. cit. and pot. acet. and in two days the temperature was down and almost all the symptoms had disappeared. She was discharged on the eleventh day well, with the urine free from pus.

(5) URINARY CASES.

In these cases, of course, the diagnosis is much more simple as attention is drawn to the affected system. There is often severe pain in the kidney region, usually the right, and the organ itself may be enlarged and palpable, while its size may vary from time to time, as in hydronephrosis. If the kidney substance is involved there may be œdema of the face, hands and feet. The bladder symptoms are usually referable to the hyperacidity of the urine, and

consist of enuresis, frequency of micturition, straining and pain during the act. Such bladder symptoms, if untreated, may die down for a day or two to reappear again with increased violence.

Such a case is the following :

F. T—, girl, aged $5\frac{1}{2}$ years. Admitted for swelling under the eyes and passing of blood in the water for fourteen days.

The child woke one morning with the eyes swollen. She was feverish and complained of thirst and slight frontal headache. The urine was highly coloured, and at times quite red. There was slight diarrhoea, but no vomiting ; the legs and abdomen were swollen.

She had suffered from kidney disease two years previously and tuberculous peritonitis when six months old.

On admission the child was found to be puffy under the eyes, and the feet and legs were swollen.

The spleen was enlarged and the abdomen was dull on the flanks, a distinct thrill being felt on palpation.

The urine was acid, blood and a little pus were present, and an organism identified as *Bacillus* of Gaertner.

After one month's treatment with alkalis the child was discharged with no symptoms and no oedema, though Gaertner's bacillus was still obtained on cultivation of the urine.

All these various symptoms are doubtless results of the circulation of the toxins produced by the bacilli, and it was noticeable that in most cases they disappear after treatment by alkalis, which, as Thomson Walker has pointed out, seem to neutralise these toxins, though they may not cause the bacilli to disappear from the urine. That such divergent symptoms can occur from the same cause, only emphasises the necessity of careful examination of the urine in all doubtful cases of illness in young children.

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CONGENITAL DIFFUSE NON-INFLAMMATORY CORNEAL OPACITY IN TWO SISTERS.*

By FRANK MOXON, M.B., B.S.,

Chief Clinical Assistant, Royal London Ophthalmic Hospital, Moorfields.

THE two female children shown this evening are the second and third of a family of four; they are aged 8 and 5 years respectively. The elder of the two attended Moorfields for the first time when aged 2 years, and the younger when aged 3½ years. The mother states that the condition of the eyes was noticed at birth, and that up to now there has been no marked change. Both confinements were instrumental, but otherwise normal. The elder child is said to have had a slight cold in both eyes soon after birth, but not so the younger.

Both children were breast-fed about nine months.

All four children of the family have been healthy, and, with the exception of the elder of the two with the affected eyes, who had a severe attack of gastro-enteritis when aged one, they have had no fevers or serious illnesses. The parents are both healthy. The maternal grandfather and paternal grandmother were brother and sister; no history of syphilis or tuberculosis, nor any miscarriages. There is no family history of either constitutional or eye disease.

Both children are bright and healthy looking, and I can find no evidence of constitutional disease or congenital defects in other parts. Wassermann's and von Pirquet's tests were negative in the case of both children. Their teeth are good, although the elder shows irregular hypertrophy of the enamel and some crenation of the cutting edges. They both suffer in bright lights from slight photophobia. They are not colour-blind. The fields of vision seem to be normal, although on account of the children's age they cannot be investigated with accuracy. Pupils, tension, ocular movements, bulbar and palpebral conjunctiva, lachrymal apparatus and sclera are normal. In each case the refraction shows slight compound myopic astigmatism, and the vision is $\frac{5}{60}$ with each eye separately and $\frac{6}{60}$ binocularly. The corneæ appear on direct illumination moderately opaque and milky looking. The surface corneal reflex is bright and regular. There is a fairly good fundal reflex, although the reflex

* A paper read before the Section of Ophthalmology of the Royal Society of Medicine on February the 4th, 1914.

for retinoscope purposes is ill defined. On focal illumination, aided with the corneal magnifier, the surface of the cornea is seen to be slightly pitted, but otherwise normal. The opacity is seen to be evenly distributed over the whole cornea, and to be composed of separate minute spots, which in parts tend to coalesce. These spots seem to be fairly evenly distributed throughout the thickness of the cornea. There is no keratitis punctata. There are no blood-vessels in the cornea, and the marginal vascular loops are not broken or of abnormal appearance. The anterior chambers are of normal depth, the irides are of normal colour—grey green—and the markings are clear, and show nothing of an abnormal nature. The lenses are clear, as also is the vitreous. The discs and vessels show nothing abnormal. The choroid and retina show no gross lesions, although, on account of the corneal opacity, minute details cannot be examined, it would seem from the reflex and the general pigmentation that they are quite normal.

It seems that there is some doubt as to whether there is such a thing as congenital non-inflammatory opaqueness of the cornea; I have therefore thought that the cases I have shown to-night might be of some interest. Terrien, of Paris, states that congenital opacities are of two kinds—the first associated with other ocular malformations, and the second one in which a diffuse opacity of the cornea is the only manifest alteration. He further states that he thinks the changes are the result of intra-uterine inflammation rather than due to an arrest of development. The case on which he gives a pathological report is, however, not one of the kind in which the corneæ alone are involved, as is the case with the sisters I have shown to-night. S. Crompton described a case of congenital opacity of the corneæ in two brothers, but here, again, there were other complications present, such as staphyloma and microphthalmos. He, however, referred to other cases of S. Farrar, in which, apparently, the corneæ only were affected, in three or four children of the same family. Since, however, the opacity in three of these cleared up completely within ten months, and the fourth, although it had not cleared up entirely at the end of two years, yet showed evidence of clearing by increase of vision, I think that they were probably of an inflammatory nature, and not developmental. I have looked up many other cases, including those described by G. W. Thompson, J. H. Boas, Profs. Hosch and Nettleship, but the only cases I have been able to find recorded apparently exactly like the ones I have shown are those described by Prof. Komoto, of Tokio, with this interesting addition, however—that in his cases the condition was also

hereditary ; for the father, who is a medical man, aged 40 years, in addition to his two children and a nephew, all had diffuse opacities of the cornea at birth, such as I have described. The two children also had congenital cataracts, but in the case of the father and the nephew the corneal opacity was the only defect ; during prolonged observation, it is said, the corneæ have shown no sign of clearing.

I have now carefully watched the two children whom I have shown to-night for two and a half years, and so far as I can tell from the appearance and the vision there is no change whatever in the opacity. If these changes are to be considered as of inflammatory origin, the fact that they have changed so little, if at all, since birth is, in my opinion, somewhat against the theory of inflammation. And when you remember that there is no sign of vascularisation, and that the Wassermann test is negative, I think that the evidence that the condition is due to some mal-development of the corneæ, *e. g.* irregular lamellation of the fibrous tissue, is, to say the least, more than feasible.

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CASE OF CYST OF THE CÆCUM IN A CHILD, AGED 3 MONTHS, CAUSING INTESTINAL OBSTRUCTION; RESECTION OF INTESTINE; RECOVERY.*

By W. GIRLING BALL, F.R.C.S.,

Assistant Surgeon and Warden of College, St. Bartholomew's Hospital.

A MALE child, aged 3 months, was admitted to St. Bartholomew's Hospital, under my care, on June the 3rd, 1913, with a history of intestinal obstruction during the previous forty-eight hours. Mention was made of several attacks of screaming, associated with abdominal rigidity. The bowels were opened by enemata, and relief appeared to be given. The pulse-rate and temperature were normal. Next day the bowels were opened naturally, and the motions were natural in all respects. In the late afternoon it was noticed that the abdomen

* The case was reported to the Section for the Study of Disease in Children of the Royal Society of Medicine on February the 27th, 1914.

was becoming distended and several screaming attacks occurred. Then, for the first time during a period of quiet, a swelling was felt in the right iliac fossa. Nothing felt *per rectum*.

A diagnosis of intussusception causing partial intestinal obstruction was made.

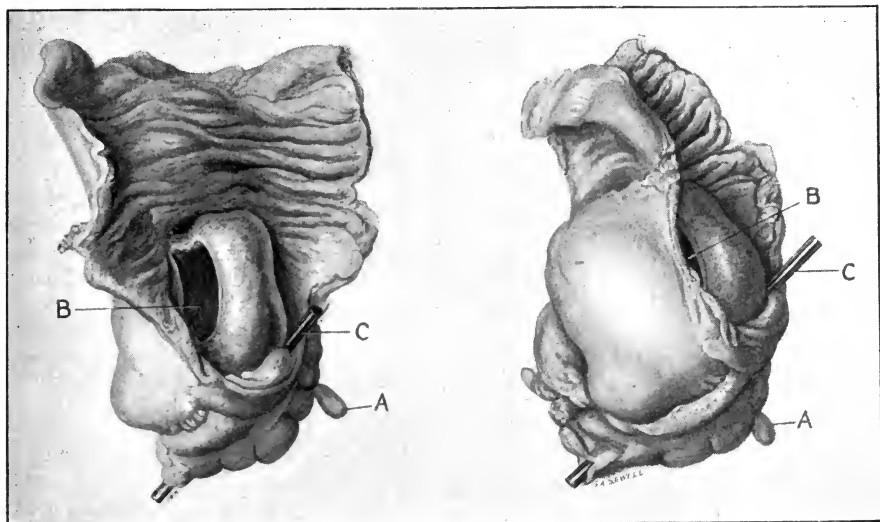
On opening the abdomen the swelling was seen to be situated in the cæcum. The appendix was lying free, and not involved in the swelling. It was still thought to be an ileo-colic intussusception, until it was found to be impossible to reduce it. The colon was then opened beyond the swelling, and it was found that it bore no relation to the ileo-cæcal valve, beyond blocking the orifice. It was a tensely distended cystic swelling attached to the outer and posterior wall of the cæcum. The hole was closed. The lower 3 in. of the ileum, the cæcum and its contained cyst, and about 2 in. of the ascending colon were excised. The open end of the colon was closed and the lower end of the ileum left open with a Paul's tube inserted, in order to relieve the marked distension of the bowel which was present. A lateral anastomosis by suture was made between the lower end of the ileum, 6 in. from its free end and the transverse colon. The abdominal wall was closed in one layer, the Paul's tube being brought out through the lower end of the wound. The drainage acted quite efficiently, and on the fourth day the bowels were opened naturally by the rectum. On the fifth day the abdominal wound gave way, and during the process of replacing the bowel which escaped, the anastomosis was torn and had to be resutured. The next day motions were passed by the rectum, and very little came through the enterostomy wound, which was still retained. At the end of three weeks, owing to the septic condition of the anterior abdominal wall from constant faecal contamination, the marked wasting and downhill progress of the child and its failure to take food, an attempt was made to close the faecal fistula. It remain closed for nine days, during which time the condition of the child improved, but it then broke down again. A fortnight later another attempt was made, but this also failed, as did a further attempt made in October; the leakage, however, was very much smaller.

On December the 10th an attack of acute intestinal obstruction supervened. The wound was freely opened up, and a dense band of fibrous tissue found to be tightly constricting a piece of intestine proximal to the site of the hole in the bowel. This was divided, and as far as possible the matted loops of intestine were separated from each other, the hole in the bowel carefully sutured, and the abdominal wall repaired in three layers. The original anastomosis was not seen. Since this time the child has made excellent progress, gaining

in weight, taking food well, sleeping well, and has regular action of the bowels.

Except that the child is small, weighing only 15 lb. 8 oz., measuring only 28½ in, and having only two teeth, he appears to be normal.

The specimen shows the condition found (*v.* Figure). It is a cyst in the wall of the cæcum, attached almost by a pedicle to the outer and posterior wall of the cæcum. It contained clear mucoid fluid, odourless, and not infected. The interior of the sac is not in any



A. The vermiform appendix. B. Window cut in cyst-wall. c. Glass rod passing through the ileo-cæcal valve.

way connected with the lumen of the bowel. It has no connection with the ileo-cæcal valve, but completely blocks its orifice. The appendix is natural and normally placed. The outer layer of the cyst-wall is composed of the glandular mucosa of bowel wall, lined by columnar-celled epithelium, the inner layer of flattened epithelial cells. The intervening tissue is composed of loose fibrous tissue and non-striped muscle.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, February the 27th, 1914.

The President, DR. LEONARD GUTHRIE, in the Chair.

Incurvate Little Fingers in an Afro-Aryan Child.—Dr. F. G. CROOKSHANK.—A child, aged 3 years, the offspring of a male African negro and a female Cingalese, had been under treatment for rickets for the last fifteen months. When first seen, as now, the incurvation of both little fingers was marked.

Pre-adolescent Dyspituitarism.—Dr. CROOKSHANK.—The patient, a boy, aged $13\frac{1}{2}$ years, weighed $10\frac{1}{2}$ st. The boy was obviously very stout, but the distribution of the fat was feminine, and the external genitals were small. There was some skeletal overgrowth, and the size of the pelvis was notable. There was some definite limitation of the temporal half of the right visual field. A skiagram of the skull showing the sella turcica was exhibited.

Extensive Cicatricial Pharyngeal Diaphragm following Scarlatina in a Boy, aged 5 years.—Mr. J. F. O'MALLEY.—The boy had been in a fever hospital for about three months, and on his return it was noticed that he "spoke through his nose." He could swallow solids and liquids without difficulty and there was no interference with breathing. The diaphragm appeared as a continuation downwards of the soft palate, and was formed by the union of the free edges of the two posterior pillars. It shut off the naso- from the oro-pharynx, and was complete except at the centre of its upper and lower borders. The upper opening was a small space surrounding the uvula, in which the latter was free to move. At the lower border were two openings, one on each side of a central adhesion, which passed downwards and backwards, and was attached to the posterior wall of the pharynx, opposite the level of the epiglottis.

Cyst of the Cæcum causing Intestinal Obstruction treated by Resection of Intestine followed by Recovery.—Mr. W. GIRLING BALL (*v. p. 259*).

Mammary Enlargement in a boy, aged $10\frac{1}{2}$ years.—Mr. L. E. BARRINGTON-WARD.—The left breast formed a swelling the size of an orange and was tender at times. The enlargement had been noticed for six months.

(?) **Kernikterus associated with Choreiform Movements.**—Dr. LEONARD GUTHRIE showed a female child, aged 1 year and 7 months, the second surviving child of nine, five of whom were jaundiced and died shortly after birth. The patient was also jaundiced at birth and remained so for six

weeks. The mental condition was very defective and the muscles generally weak and flabby. The choreiform movements were very marked and only ceased when she was asleep. Dr. Guthrie suggested that this was an example of survival from the form, usually fatal, of "icterus gravis neonatorum," described as "Kernikterus," owing to the fact that after death the basal central ganglia were found stained deeply yellow, while the rest of the brain was only slightly tinged.

Multiple Subcutaneous Cysts in the Arms.—Dr. CAUTLEY.—The child, aged 7 month, had several nodules varying in size from a millet-seed to a pea in the left arm. Two removed from the right elbow were found to contain clear fluid.

? Serous Apoplexy.—Dr. CAUTLEY.—The symptoms appeared after the patient, a boy, aged 7 years, had received a blow on the head. There were persistent headache, whining, restlessness and occasional vomiting. The abdomen was retracted and double optic neuritis was present.

Subacute Nephritis with Ascites and Uræmia.—Dr. CAUTLEY.—The patient, a boy, aged 9 years, was admitted for acute nephritis after two days' illness. There was then no blood and but little albumin in the urine, but the boy got steadily worse and in two weeks ascites was noticed, which increased to such an extent that paracentesis was called for. Uræmic fits developed, and the child seemed moribund, but under vigorous treatment with vapour baths, subcutaneous injections of pilocarpine, diuretics, and further paracentesis, recovery took place.

Congenital Hypertrophic Stenosis of the Pylorus.—Dr. CAUTLEY.—When admitted the pylorus was palpable and there was marked visible peristalsis. The stools were small brownish and contained some faecal matter. In spite of careful treatment and feeding the child had lost ground, and it was decided that surgical treatment (pyloroplasty) should be carried out.

Case of so-called Congenital Hypertrophic Stenosis of the Pylorus.—Dr. LANGMEAD showed a well-nourished healthy-looking girl, aged 2 years, who had been treated when seven weeks old for congenital hypertrophic stenosis of the pylorus. The patient was exhibited to show the good effects which might follow medical treatment, even when a pyloric tumour had been felt.

Urticaria followed by Œdema in an Infant aged 2 months.—Dr. JAMES BURNET.—The œdema, which was very extensive, involving the trunk and both arms and legs, appeared five days after the urticaria. There was no heart or kidney trouble. It was suggested that the condition was one of angio-neurotic œdema.

Pathologic Condition of Hip.—Mr. E. G. GAUNTLETT showed a boy, aged 9 years, who had not been noticed to limp but had complained of pain over the front of the left thigh for nine months. Flexion and extension of the hip were free, but abduction, adduction and rotation were limited. A skiagram showed marked erosion of the epiphysis, without any rarefaction of the neck. Suggestions as to diagnosis and treatment were asked for.

MEDICAL SECTION.

February the 24th, 1914.

Paroxysmal Tachycardia in a Child aged $2\frac{3}{4}$ years.—Dr. R. HUTCHINSON and Dr. J. PARKINSON (*v. p. 241*).

Paroxysmal Tachycardia in a Boy, aged $4\frac{1}{2}$ years.—Dr. PERCY KIDD.—The boy was admitted to hospital on March the 13th, 1905, for vomiting, which had occurred frequently for some time. Since he had had measles at the age of 2, he had been liable to a fit in which he went stiff and turned rather blue, but lay still and did not twitch or scream. The fits lasted a few minutes, and recurred about once a month. In June, 1903, he had a bad attack of vomiting, which lasted ten days. In 1904 he was admitted to hospital with a pulse of 240 after an attack of vomiting which lasted five days.

The heart was dilated and the liver enlarged. The pulse fell to 96 in a few days, and he was discharged nearly well in three weeks.

Condition on admission: Healthy, well-developed boy, with clear complexion. Pulse, 150; respirations, 30; apex-beat in fifth space just within left nipple line; cardiac dulness began above at the third rib on the left side, and to the right reached almost to the right nipple line. The heart-sounds were clear in all areas, and no murmurs were audible. The liver extended down to 1 in. of the umbilicus. The lungs were clear. The pulse varied from 240 to 80, though seldom below 120, except for a few hours—at the most for twelve hours on one or two occasions. The fall of the pulse-rate sometimes followed vomiting, which occurred very often.

Tincture of digitalis alone and the combined tinctures of digitalis and strophanthus and convallaria were given. An ice-bag was frequently applied to the precordia. As a rule the pulse-rate was unaffected by this treatment, but occasionally a temporary fall was observed. Almost invariably the boy looked well, his colour was healthy, and his spirits good. The blood contained 5,000,000 red corpuscles per c.mm., and the hæmoglobin content was 50 per cent. Six months after admission slight anasarca developed, the liver became more enlarged, and purpuric spots appeared on the legs. The condition of the heart remained unchanged. On September the 25th there was a sudden attack of dyspnoea and cyanosis with rapidly developed œdema, which terminated fatally the same day. Necropsy: Heart 6 oz., greatly dilated in all its chambers, especially the right ventricle. Right ventricle and, to a less extent, both auricles, slightly hypertrophied. Valves normal.

Philadelphia Pediatric Society.

March the 10th, 1914, W. N. BRADLEY, M.D., President.

Chondrodystrophia Fœtalis.—Dr. J. K. YOUNG showed two interesting cases. The first was a boy, aged 3 years, presenting typical symptoms of a large body with short extremities as commonly seen in this affection. All

extremities were markedly curved, the epiphyses were greatly enlarged, and the child could not sit up or walk. The second case was a baby, aged 14 weeks, which presented at birth the long body and short extremities. The extremities were greatly deformed and there were twelve fractures, some united and some ununited. The parents of both children were Russians. There was a history of malnutrition. The cause of the condition was not known. The second case had already been shown before the Society by Dr. Lowenburg in December, 1913.

Congenital Heart Disease.—Dr. ALICE WOLD TALLANT showed a baby born three weeks before at the Maternity of the Women's Medical College of Pennsylvania. He is the ninth child of a German woman aged 41 years; the others are living and well. Labour was normal and easy and the baby showed no asphyxiation at birth. By the next morning cyanosis was apparent, growing deeper when the child cried. Examination showed the heart enlarged a finger's breadth to the right of the sternum; very loud, vigorous beats, with gallop rhythm at times when the child was held upright. There was neither thrill nor murmur. The child nursed well, but has rapidly lost in weight from 7 lb. to less than $6\frac{1}{2}$ lb., where it now stays. Temperature has been continuously subnormal, falling even below 96° F. The blood-count, 6,920,000 red cells, shows the polycythæmia characteristic of congenital heart lesions; hæmoglobin is 35 per cent. The diagnosis must remain uncertain. In the absence of a murmur, patent foramen ovale or other septum defect is possible.

Hydrocephalus.—Dr. W. E. DANDY, of Johns Hopkins Hospital, by invitation, showed lantern-slides telling of their experimental work upon hydrocephalus.

Dr. K. D. BLACKFAN, of Johns Hopkins Hospital, by invitation, discussed a clinical and pathological consideration of hydrocephalus.

On the basis of experimental investigation conducted by Drs. Dandy and Blackfan, internal hydrocephalus has been studied to determine (1) the absorption of cerebro-spinal fluid from the ventricles and from the subarachnoid space; (2) whether or not there is a communication between the ventricles and the subarachnoid space; and (3) these observations were correlated with the pathological findings. A specially prepared neutral solution of phenolsulphonaphthalein was used. One c.c. (6 mg.) was diluted with 2 to 3 c.c. of freshly obtained cerebro-spinal fluid and injected into the ventricle. The time of its first appearance in the urine and the amount excreted over a two hours' period were estimated. The same procedure was employed in the subarachnoid space. The communication was demonstrated by determining phenolsulphonaphthalein in the spinal fluid from the lumbar subarachnoid space, after its intra-ventricular injection. A normal standard of absorption from the ventricles and the subarachnoid space was determined from patients without hydrocephalus. In such patients phenolsulphonaphthalein appeared in the spinal fluid of the lumbar subarachnoid space after its intra-ventricular injection in 1 to 7 minutes. By demonstrating the patency or exclusion of the communication between the ventricles and the subarachnoid space it was possible to subdivide the cases of internal hydrocephalus into two groups—obstructive and communicating. Seven cases of the obstructive type were studied. In each there was an obstruction, as shown by the non-appearance of phenolsulphonaphthalein in the spinal fluid after its injection into the ventricle. In five an obstruction was demonstrated at autopsy; the other two patients are still alive. The ventricular absorption

was negligible in this group ($\frac{1}{4}$ to 1 per cent.) as compared to the normal (10 to 20 per cent. in two hours). This is evidence that there is practically no absorption from the ventricles. The time of first appearance of phenolsulphonaphthalein in the urine was much delayed (30 to 45 minutes as compared to the normal 7 to 10 minutes). The subarachnoid absorption was normal, as shown by the excretion of 35 to 60 per cent. in a period of two hours. The essential feature in this type of hydrocephalus was the obstruction to the normal passage of cerebro-spinal fluid from the ventricle to the subarachnoid space. When such obstruction exists, hydrocephalus results because the cerebro-spinal fluid cannot escape from its place of origin in the ventricle, where absorption is negligible, to the subarachnoid space, where the absorption is high and takes place normally.

Five cases of the communicating type were studied. In each free communication between the ventricles and the subarachnoid space was demonstrated by the phenolsulphonaphthalein test. This communication was further attested by the appearance of the solution in the ventricular fluid after its injection into the lumbar subarachnoid space. This transmission of fluid to the ventricles after lumbar injection is of the utmost importance in the consideration of the treatment of disease of the central nervous system by intra-spinal medication. The absorption from the subarachnoid space was greatly diminished (10 to 20 per cent. as compared to the normal 35 to 60 per cent.). The time of first appearance in the urine was correspondingly longer. This diminished absorption was constant, and is the physiopathological basis for the development of this type of internal hydrocephalus. The ventricular absorption (2 to 6 per cent.), though low, was definitely higher than in the obstructive type. Since it has been shown that there is practically no direct absorption from the ventricles, the absorption from the ventricles in this type and in normal individuals must be dependent upon the absorption from the subarachnoid space. No pathological examination was obtained in cases of this type. The essential feature is the low absorption of cerebro-spinal fluid from the subarachnoid space. In the obstructive type an obstruction was found in five of the seven cases. In two cases this was due to adhesions obliterating the foramina of exit at the base of the brain; in one to a tuberculous exudate at the base of the brain; and in two there was a congenital absence of the aqueduct of Sylvius. There was a definite history of meningitis preceding the onset of hydrocephalus in two cases of the communicating group. The hydrocephalus in one case of the obstructive group was preceded by epidemic cerebro-spinal meningitis, and in another, in which hydrocephalus was present at birth, there were old adhesions. These probably resulted from prenatal infection of meningitis. One case of hydrocephalus resulting after removal of a cervical meningocele was studied. There was diminished absorption from the subarachnoid space in this case. This low absorption may have been the reason for the development of hydrocephalus following the removal of the meningocele. These observations show that there are two anatomically different types of hydrocephalus. In the one the treatment should be directed towards removal of the obstruction, in the other a means for increasing the absorption of cerebro-spinal fluid should be supplied.

Dr. MAX M. POOR said that Dr. Frazier and he had been doing practically the same work here. In their experiments upon dogs they have used a slightly different technique, the posterior end of the fourth ventricle being exposed by an incision through the occipito-atlanto ligaments, instead of by a double occipital decompression. They had used gauze instead of cotton

within the fourth ventricle, causing blockage of the aqueduct of Sylvius. Aleuronat had also been used, and when combined with the gauze plug, produced a rapidly fatal hydrocephalus in animals. They also succeeded in obtaining hydrocephalus in puppies. Hydrocephalus had resulted in one dog in which the pineal gland had been removed, probably due to adhesions on the floor of the third ventricle. Phenolsulphonaphthalein had been used as the indicator of absorption of cerebro-spinal fluid. Trypan red and trypan blue had also been used, and demonstrated that the stain was very slowly taken up by the lymphatics, passing out of the skull through the nerve-sheaths, principally the optic and olfactory, staining the posterior nasal fossa, from which it was taken up, and carried down the anterior lymphatics of the neck. Their work did not sustain some of the statements of Kopetzky and Haynes. No drugs have been found which increased the cerebro-spinal fluid. Colloidin tubes drained the ventricles well in their experiment. He considered that their work confirmed that which had been reported by Dandy and Blackfan.

Dr. W. G. SPILLER considered this work most important. When the aqueduct of Sylvius is occluded, the fourth ventricle usually is not dilated. The rapid increase of cerebro-spinal fluid under certain conditions is most striking. There must be a communication between the ventricles and the subarachnoid space. The X rays will show hydrocephalus by atrophy of the inner table of the skull, corresponding to the cerebral convolutions. He has found that the head is not usually so large in the obstructive as in the non-obstructive hydrocephalus. Puncture of the corpus callosum is useless in the non-obstructive cases. He asked how the phenolsulphonaphthalein is injected; also how the obstruction, when it exists elsewhere than in the roof of the fourth ventricle, is to be removed. Dr. Spiller then referred to the various types of hydrocephalus which he had studied, and finally asked how they would treat the non-obstructive type of hydrocephalus. As far as he knew, the results of treatment had not been brilliant.

Dr. BLACKFAN, in closing the discussion, said that the technique of a ventricular puncture was not difficult in the advanced cases, as fluid may be obtained by puncture at almost any point through the anterior fontanelle. In the less dilated ventricles the puncture is made at the midpoint of the anterior fontanelle about $\frac{1}{2}$ cm. to the left or right of the middle. The needle is inserted about 2 to 4 cm. An ordinary lumbar puncture needle is used.

Société de Pédiatrie, Paris.

February the 10th, 1914. (Bulletin No. 2.)

Vaccinotherapy in Typhoid Fever.—M. COMBY reported two further cases in which the efficacy of the treatment seemed undeniable. The dose employed in one case, aged $2\frac{1}{2}$ years, 1 c.c., was large, but well tolerated. The results of all the cases were that Vincent's autolysat is a safe therapeutic agent in doses of 1 c.c., repeated two or three times at intervals of a few days. Tolerance was perfect and no untoward events occurred; recovery took place without relapse.

The Diagnosis of Appendicitis in Infants.—M. SAVARIAUD criticised the paper read by M. Veau at a previous meeting in which he stated (1) that children did not localise appendicular pain, and (2) that there was no tenderness on pressure in the iliac fossa. He agreed with the former contention, but while admitting that contracture and hyperæsthesia of the iliac fossa might be absent, he stated that this was due either to an abnormal situation of the appendix (retrocæcal or pelvic) or to the mucous membrane alone being inflamed. There was nothing peculiar to the infant in this. The only distinction between infants and older children was that the former were not influenced by suggestion.

Congenital Absence of the Pectoral Muscles.—MM. SAVARIAUD and ROEDERER.—A brachio-thoracic band prevented to some extent abduction and elevation of the arm. There was syndactylism on the same side.

Varicella in a Newborn Child.—MM. LEREBoullet and MORICAND reported a case in which varicella was contracted fourteen days after birth from the mother, who presented the eruption the day before parturition.

Absence of one Mammary Gland.—M. MOUCHET showed a boy, aged 8 years, with this condition.

Scoliosis and Dextrocardia.—M. OMBREDANNE.

Scapular Tic.—MME. NAGEOTTE-WILBOUCHEWITCH.

The Nutritive Value of Raw Milk and the Influence of Sugar upon it.—MM. VARIOT and LORENZ-MONOD read a paper based on eighteen cases in which raw milk had been tried. In fifteen of these it had to be abandoned and five deaths occurred. Of these, one occurred suddenly after five days of raw milk *régime*, during which the child lost 10 grm., one after ten days, and two after eighteen days. All had severe intestinal symptoms and lost weight. The authors considered raw milk more inferior to homogenised milk even in favourable cases. In a further series of nine cases sugar was added to raw milk to the amount of 28 to 30 grm. daily. In these cases there were fever and intestinal symptoms, and the stools were frequent and foetid. When this *régime* was continued rickety changes in the skeleton became very marked.

VINCENT DICKINSON.

INFANT HYGIENE IN THE MEDICAL CURRICULUM.

The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy recently investigated the facilities which are at present afforded to medical students for instruction in infant hygiene. The investigation shows that in general the preventive aspects of infant hygiene are inadequately appreciated, and that sufficient attention is not given to the teaching of the home management of infants, and that the whole subject of infant hygiene holds too subordinate a position in the training of medical men as well as of nurses and midwives. The Association urges, therefore, that a course of clinical instruction on infant hygiene should be arranged by all the teaching centres, and that the certificate required from candidates in midwifery for the final examination should include evidence that they have received instruction in ante-natal pathology and hygiene, as well as in the subsequent management of infants.

Abstracts from Current Literature.

Medicine.

The permeability of the meninges (*Riv. di Clin. Pediat.*, 1913, xi, p. 641).—**G. Squarti** experimented with four substances and tested their presence in the fluid obtained by lumbar puncture. In 48 experiments the permeability was found positive, 10 times out of 10 with formaldehyde given as urotropine, once out of 15 with iodine, twice out of 12 with salicylate of soda, and twice out of 7 with nitrate of soda. Thus two natural groups are formed: (1) Substances which always pass into the cerebro-spinal fluid (100 per cent.), and (2) those which only pass under special circumstances (14·7 per cent.). To the first group belong formaldehyde, chloroform, acetone, etc. To the second belong all the others, as iodine, salicylate of soda, and probably all the substances experimented with by other observers. While there is unanimity of opinion with regard to formaldehyde there is much diversity with regard to the substances in Group 2. These are found in the cerebro-spinal fluid in some instances with normal meninges and in many with diseased meninges. Some observers therefore conclude that there is increased permeability in pathological states, and that iodine passes constantly in tuberculous and never in cerebrospinal meningitis, others asserting the contrary; some deny that salicylates pass through normal meninges, but only in meningitis; others have observed the exact opposite. The author found that normal meninges became permeable to certain drugs, but only when given in large, almost toxic doses, while in meningitis permeability was obtained with medicinal doses.

VINCENT DICKINSON.

Cerebro-spinal meningitis (*Interstate Med. Journ.*, 1913, xx, p. 795).—**N. P. Barnes** reports seven cases of cerebro-spinal meningitis in which cervical opisthotonos was one of the last signs to develop, whereas contraction of the recti and other abdominal muscles was noticeable in every case. In three instances the disproportion between the pulse-rate and the temperature was marked. Dilatation of the pupils was produced in all the cases when Kernig's sign was being elicited, and also in several instances when the head was being flexed upon the chest. In two cases the palate was completely covered with herpetic vesicles. In this disease the writer noticed that while using an electric light and reflector the rash promptly appeared. The reflector was applied on various parts of the body at different intervals and always brought out the eruption. Even ten minutes after death the eruption could be produced by holding the light about 10 in. from the part for half a minute. This phenomenon could not be induced in meningitis due to other organisms.

T. R. WHIPHAM.

Kernig's sign and contracture in the meningeal affections of the infant (*Le Nourisson*, 1913, i, p. 133).—**J. Renault** and **P. P. Lévy** record cases of cerebro-spinal meningitis, tuberculous meningitis, and meningeal hæmorrhages to show that the infants in whom Kernig's sign is absent are precisely those in whom there is an abundant effusion, whether it be due to meningococcal or streptococcal pus or to blood. When the contracture is not obvious it may be revealed by holding up the infant under the axillæ, when, if it is suffering from meningococcal meningitis its legs will be stiff

and flexed. Paralysis of the neck muscles can be differentiated from contracture by placing the infant in the ventral decubitus. If the head becomes flexed, paralysis is present; while if it remains extended there is contracture.

J. D. ROLLESTON.

Meningitis due to Pfeiffer's bacillus (*'Le Nourisson,'* 1913, I, p. 278).—**L. Lagane** alludes to Blaque's thesis (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, IX, p. 278), and records a fatal case in a male infant, aged 18 months, admitted to hospital for broncho-pneumonia. The only symptom indicating meningitis was a marked somnolence. Lumbar puncture gave issue to a greenish, thick, purulent fluid, containing numerous polymorphs and Pfeiffer's bacilli. Subsequently the characteristic symptoms of meningitis developed. Post mortem the cerebral and spinal meninges showed a large quantity of greenish pus, which was especially thick at the base of the brain and posterior and inferior part of the cerebral hemispheres. There was broncho-pneumonia in both lungs, in which Pfeiffer's bacilli were found associated with pneumococci.

J. D. ROLLESTON.

Subacute meningitis due to Pfeiffer's bacillus subsequent to infantile spinal paralysis (*'Arch. de méd. des enf.,'* 1913, XVI, p. 1845).—**P. Haushalter** and **Jacquot** met with this case in a child aged 2 years.

F. R. B. ATKINSON.

Meningococcal arthritis with ill-marked cerebro-spinal meningitis in an infant (*'Gazz. internaz. di med., chir.,'* etc., 1913, p. 920).—**V. Fragale** records a case in a male infant, aged 10 months, breast fed, in whom the meningeal localisation was secondary to meningococcal arthritis of the knee. Before lumbar puncture was performed, and a turbid fluid containing meningococci was removed, the only evidence of meningitis was the occurrence of three convulsive attacks. There were no vomiting, tension of the fontanelle, nor eye troubles, and only slight nuchal rigidity, which developed late. Recovery took place after three injections of anti-meningococcic serum.

J. D. ROLLESTON.

Meningitis due to parameningococci (*'Gaz. des Hôp.,'* 1913, LXXXV, p. 1439).—**R. Dujarie de la Rivière** and **J. Dumas**.—When examining rhino-pharyngeal mucus Dopter found germs resembling meningococci, but differing in not being agglutinated by antimeningococcal serum; he calls them parameningococci. Clinically it was found that some cases of meningitis were due to parameningococci and a specific serum of these was curative. Infection by this organism may assume several clinical forms, viz. pure septicæmia, septicæmia with meningeal signs, and meningitis. In these the blood and the cerebro-spinal fluid may give the organism on cultivation. It is the shape of a coffee-grain, often in pairs with the convex surfaces together. It is Gram-negative, but takes aniline basic dyes readily. It may be intra- or extra-cellular. The cultures from centrifuged cerebro-spinal fluid are small greyish, transparent colonies, with regular edges. They ferment glucose and maltose, but not the other sugars. They are less pathogenic to guinea-pigs than the ordinary meningococci. There is no doubt of the efficacy of Dopter's anti-parameningococcic serum in cases of this infection.

J. PORTER PARKINSON.

Parameningococcic meningitis in an infant (*'Bull. et mém. Soc. méd. Hôp. de Paris,'* 1914, XXXVII, p. 45).—**P. Menetrier** and **S. Avezon**, who

had previously recorded a fatal case (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 131), now publish one successfully treated by anti-parameningococcic serum in an infant aged 4½ months. The symptoms were those of meningococcic meningitis but no lasting improvement followed the use of meningococcic serum, whereas the first injection of anti-parameningococcic serum caused a sudden fall of the temperature and a gradual disappearance of the meningeal symptoms. The parameningococcus was found by Dopter in the cerebro-spinal fluid. In the subsequent discussion **Netter** said that for the last year he had been using for meningitis cases bottles containing equal parts of anti-meningococcic and anti-parameningococcic serum with the best results. **Hallé** (*ibid.*, p. 149) related the case of a male infant, aged 9 months, with diplococcal meningitis, who got worse in spite of two injections of anti-meningococcal serum, but whose temperature fell at once after the first injection of anti-parameningococcal serum. Complete recovery took place after two more injections of the same serum.

J. D. ROLLESTON.

The ætiology of tuberculous meningitis (*Wien. klin. Woch.*, 1913, xxvi, p. 247).—**H. Koch**.—The paper is based on a study of 355 cases from Escherich's and Moser's clinics, the autopsies in each case having been made by Ghon. *Season*.—From December onwards the cases show a continuous rise, which reaches its height in April and then slowly diminishes in frequency. *Age*.—A large percentage occurs in the first year; the number increases in the second year, and then rapidly falls. Autopsies on tuberculosis cases from 1906 to 1910 showed that 40 per cent. of the fatal cases in the first year were due to tuberculous meningitis, while in the second year 58 per cent. of the fatal cases were due to this cause. *Heredity*.—Tuberculosis of the father occurred in 27 cases, of the mother in 33, of both parents in 2, and of other near relatives in 8. Heredity accounted for 70 cases, or 23 per cent., almost all of whom were suffering from severe lung disease. In only three cases was there tuberculous meningitis in the mother. One cannot, therefore, speak of an inheritance of a disposition to tuberculous meningitis. *Family history*.—In 75 families, containing 455, details as to other children in the family were obtainable: 47 had died of tuberculosis and 22 of these of tuberculous meningitis. *Age*.—Of 302 cases, 145 were boys and 157 girls. *Infant feeding*.—Among children up to three years 111 were breast-fed and 24 artificially fed. Six breast-fed children died of tuberculous meningitis, so that suckling cannot be held to afford any protective influence. *Previous diseases*.—130 had had measles, which in 30 had occurred in the year before the meningitis, 67 had had whooping-cough, 36 in the previous year, 36 varicella, 17 diphtheria, 9 scarlet fever, 30 lung diseases, 34 tuberculous diseases of various organs, of which 11 involved the brain or the meninges. In cases with a recent history of measles or whooping-cough the autopsies showed an acute or subacute miliary tuberculosis in addition to a chronic process. With the exception of tuberculosis, lung diseases very rarely occurred directly before the attack of meningitis. *Trauma* had occurred in 13 cases. The autopsies showed two important facts: (1) Old tuberculous processes in 45 per cent. of the cases consisted of a primary focus and regional lymph-glands. In the majority of cases tuberculosis existed in two or more organs besides the primary focus. (2) With few exceptions the old tuberculous processes were still in a stage of activity.

J. D. ROLLESTON.

On a special mode of onset of tuberculous meningitis, with remarks on direct bacteriological examination of the cerebro-spinal fluid (*Osp. dei Bamb. di Milan.*, 1913, II, No. 8).—**G. Repaci** records a case of tuberculous meningitis in a boy, aged 5 years, in which the meningeal symptoms were preceded for a long time by ordinary colitis (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, IX, p. 555). As the result of long experience, he states that he has never failed to find tubercle bacilli in direct examination of the cerebro-spinal fluid in tuberculous meningitis, although the search has sometimes lasted two or three hours.

J. D. ROLLESTON.

Acetonæmic vomiting and acute encephalitis (*Ann. de Méd. et Chir. Inf.*, 1913, XVII, p. 306).—**Babonneix** and **Blechmann** have observed a curious case of acetonæmic vomiting, terminated by signs of acute encephalitis. A child, aged 5 years, who had for months passed an excess of water, suddenly had an attack of acetonæmic vomiting. On the fifth day right hemiplegia set in, with an extensor plantar reflex pointing to its organic origin; the paralysis disappeared in two hours, the next day it returned for a few hours and then the child became torpid; a bronchopneumonia supervened and the child died. In the absence of an autopsy the authors consider that a spasm of the Sylvian artery would account for the cerebral symptoms, and hepatic insufficiency for the general condition. Lumbar puncture gave a negative result.

J. PORTER PARKINSON.

Infantile cerebro-cerebellar diplegia of flaccid, atonic-astasic type (*Amer. Journ. Dis. Child.*, 1913, v, p. 425).—**L. Pierce Clarke** describes under this title a condition not hitherto comprehensively studied. Usually nothing abnormal is noticed until the child is a few months old. Then it becomes evident that it cannot hold up its head, sit or stand, though the motility of the limbs is normal. The most marked feature is the enormously exaggerated mobility of the joints, not very dissimilar from myotonia congenita. The limbs can be placed and easily maintained without pain in most arbitrary positions. In later years ataxia of the cerebellar type is superadded, and incoordination of all extremities is marked whenever the child attempts to stand or walk. Mutism is common, and very marked speech defect constant. Mental defect is also present. These three symptoms, pronounced flaccidity, mutism, and idiocy, are the three prominent and constant symptoms establishing the disease type. Other symptoms may vary according to the morbid anatomy of the case; transition cases merging into the classical spastic syndrome have been recorded by Förster. The condition is attributed to an unknown cause acting during intra-uterine life and resulting in a permanent disablement of the motor functions of the cerebellum and forebrain.

REGINALD MILLER.

Juvenile general paralysis and hereditary syphilis (*Thèses de Paris*, 1913-14, No. 37).—**J. F. J. Huguët**.—The clinical picture of general paralysis in the child or adolescent is rarely as typical as in the adult. From the psychical aspect the disease is often incomplete, and the physical signs predominate. A fairly large number of patients regarded as backward, idiots, or epileptics are really examples of general paralysis, and the same may be said of some cases of dementia præcox. In diagnosis great importance attaches to lymphocytosis and Wassermann's reaction in the cerebro-spinal fluid. Clinically an onset with a convulsive attack is much

more frequent than in the adult. Henceforward there is progressive dementia. There is almost always an absence of delirium. Infantile general paralysis and tabes are frequently associated. The frequency and importance of cerebellar symptoms may often cause difficulty in diagnosis. The thesis contains the histories of six original cases in patients aged from $3\frac{1}{2}$ to 20 years.

J. D. ROLLESTON.

Tubercle of the cerebellum ('*Dub. Journ. Med. Sci.*,' 1913, II, p. 212).

—**W. Boxwell.**—A boy, aged 10 years, the only child of a father dead of phthisis, came under observation on January 15, 1913. There was a somewhat vague history of headache, vomiting and defective sight. He was a well-developed, intelligent child, and explained that he had had severe headaches at fairly frequent intervals, but that vomiting came on when playing or romping, rather than after food or when at rest. On physical examination his gait was found to be strutting in character, with some ataxia, but without tendency to reel to one or other side. The jerks were variable, but generally increased, especially in the right leg, and a clonus could sometimes be developed. The plantar reflexes were also variable. The abdominal reflexes were present, the right cremasteric generally absent. Nystagmus was marked. Distant vision bad. No vertigo, no history of fits, and no tremor. Hearing good. Pupils large and even, tongue normal. On February 1, after getting out of bed, he became giddy and fell, and about this time he had his first and only attack of vomiting. On February 4, a "lower neuron" paralysis of the left facial nerve set in, followed on February 8 by deafness in the left ear. An ophthalmoscopic examination showed "double-choked disc" with atrophy in the left eye. On February 9 he had an attack of convulsions. The diagnosis of a growth of some sort, probably tubercular, situated in the left lobe of the cerebellum, was now partly obvious, and the almost sudden development of dysidiadokokinesis of the left arm strengthened the impression. A decompression operation was undertaken, but the child never quite recovered from the shock of the operation and died two days after. A large tubercular mass, one and a quarter inches in diameter, was found post mortem, occupying the left lobe of the cerebellum and displacing the right lobe considerably to the right side. No other evidence of tuberculosis was found.

J. ALLAN.

Chorea: Two cases in which *Streptococcus viridans* was found in the blood ('*Journ. Amer. Med. Assoc.*,' 1914, LXII, p. 110).—**J. H. Richards** reports two cases of chorea in which the organism found in the blood in no way differed from the description of the *Micrococcus rheumaticus* of Poynton and Paine, but on the other hand it was culturally identical with the description of the green-producing streptococcus of Schottmueller. The fact that the coccus of Schottmueller and the coccus of Poynton and Paine are culturally identical was observed by Hastings in 1912, and later worked out by Thro at the suggestion of Hastings. Undoubtedly the coccus isolated by Dana and others is identical with the coccus found in the two cases reported. The number of cases, however, is too small to form definite opinions as to the ætiology of chorea. That the coccus found in the blood is associated with endocarditis there is no doubt; but that it is the ætiologic factor in chorea is not proved. The peculiarities of the coccus isolated are as follows: (1) It is of very slow growth. Sometimes the *Streptococcus*

viridans does not appear in the original blood-culture for twelve days. (2) Green is produced on blood-agar plates. (3) It is of relatively slight toxicity. (4) It is not dissolved by bile as is the pneumococcus. (5) It does not peptonise milk as does *Micrococcus zymogenes*.

T. R. WHIPHAM.

Epilepsy in children (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 2291).—**M. Woods** reports seven cases of epilepsy in children which can be traced to single alcoholic intoxications on the part of one or both parents who were otherwise teetotalers. Chronic alcoholism in the parents is commonly held to be responsible for a large percentage of epileptic children, but a certain number of unknown origin the writer considers are possibly due to a temporary or unwonted condition of intoxication of one of the parents at the time of procreation. The alcohol, it is presumed, influences or changes the constituents of the seminal fluid, paralysing temporarily and otherwise altering the spermatozoa. The cases are as follows: (1) The child, the result of this union, at a time when the father was under the influence of liquor, was posthumous, being born six months after the death of its father, who died suddenly while mailing a letter three months after the last visit of his wife. The child developed epilepsy in its third year. (2) The patient was the child of an engineer called from home to fill an important position on a sugar plantation in Cuba. He had been a total abstainer, but before embarking for his new quarters, leaving his wife and two children behind, was tendered a farewell banquet by friends, when he got into a state as he called it of "alcoholic hilarity," the first time in his life. Nine months after his embarkation his wife gave birth to a son who developed epilepsy in his fifth year. (3) The patient was the daughter of the widow of a soldier who died in the Philippine Islands of dysentery three months after landing. His wife asserted that she never knew her husband to drink anything intoxicating until a few days before his enlistment, when he came home in a state of alcoholic excitement, after having spent the day with some soldier friends. Next day he enlisted and she never saw him again. In due time a boy was born; on the third day after its birth it went into convulsions, remaining in them for nearly two days, and since it averaged during the eight years of its life about one *grand mal* weekly, with frequent attacks of *petit mal*, although it has had as many as six convulsions in a day. (4) The patient was the daughter of a medical man who had never tasted liquor until the night of his first intoxication. When he began the study of medicine he was married, with two healthy children. There was no family history of epilepsy or other neuroses. On the night of the commencement of his college, one of the professors, as was the custom, gave a reception to the new-fledged doctors, when he drank his first glass of wine, and another and another, and promptly became intoxicated. He declares that his epileptic child, born about the regular time after this "debauch," as he called it, developed convulsions in its second year, consisting at first of but three, at intervals of a week apart, when they disappeared for two years, but returned again at periods of about one every two or three months. Of late they have been developing with greater rapidity, and an erratic disposition on the part of the patient amounting to mild insanity has appeared. The other three illustrations are already on record. Two of them in different families were traced by the parents themselves to single transgressions in the use of intoxicants. The father of one of the families afterwards became a chronic inebriate and died of pneumonia following an attack of delirium tremens, but beyond that there was no

trace of degeneracy in his race as far as could be discovered. The child is still living, an inmate of an epileptic colony. The wife is married again and the mother of two robust children.

T. R. WHIPHAM.

The recognition and treatment of true idiopathic epilepsy in children (*Dub. Journ. Med. Sci.*, 1913, II, p. 92).—J. N. G. Nolan emphasises the importance of careful investigation in each case. The general treatment of the causative disease must be undertaken thoroughly, and of great importance is the building up of the patient's general strength. The treatment of epilepsy at the onset of the disease may be (1) medicinal; (2) dietetic; (3) a combination of both of the above, with general hygienic treatment. A carefully regulated life with a purin-free diet and a small daily dose of bromides is the treatment *par excellence*. The smallest dose of bromide which appears to exert a favourable influence over the fits should be taken as the maximum, and this never should exceed 60 gr. The effect is intensified by the full quantity being given at one time. The best time is at night or before rising, depending on whether the patient is subject to diurnal or nocturnal attacks. Plenty of water should be given with the dose, and sufficient laxative to ensure a daily evacuation of the bowels. The best adjuvant is the syrup of Virginian prune. Education must be carefully supervised.

J. ALLAN.

Mental deficiency and delinquency (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 471).—Olga Bridgman, as a result of an examination of 104 children who had been committed to the State Training School for Girls at Geneva as sexual delinquents, found that 101, or 97 per cent., were feeble-minded according to the Binet tests. This would seem to prove that mental deficiency is an important factor in the causation of sexual immorality, and to indicate the routine employment of a mental examination for all children of this class in order to determine how far they may be held responsible. Of the feeble-minded comparatively few are aggressive sexual perverts, but most are helpless victims, who should have protection, and who, under close supervision, may lead useful contented lives. By no means all delinquent girls are feeble-minded, but probably those not amenable to supervision and direction in their own homes are largely so.

T. R. WHIPHAM.

Acquired mental defect (*Clin. Journ.*, 1913, XLII, p. 27).—A. F. Tredgold says that primary mental defect is due to deficiency or pathological change in the make-up of the germ-plasm, while in acquired mental deficiency the germ-plasm is healthy but is interfered with by external influences at or after birth, a neuropathic heredity being absent. It includes about 10 to 20 per cent. of all forms of amentia. It may be due to toxins generated by such organisms as the *Diplococcus intracellularis* or the causative agent of poliomyelitis. There may be prodromal symptoms of malaise, but usually the onset is violent with headache and convulsions. A *status epilepticus* may ensue, the coma deepens and death ensues. Complete recovery is rare; usually there is some mental and physical deficiency shown by apathy, irritability, and occasionally deaf-mutism. The second group is caused by vascular lesions, hæmorrhage due to prolonged labour but not to instrumental delivery being the commonest. The child at birth is asphyxiated, with a feeble pulse and contracted pupils and muscles; episthotonos and convulsions may occur. Paralysis supervene, mono- and hemiplegias being those most usually

seen, but di- and paraplegia are common. Jacksonian and epileptic convulsions are frequent. The degree of mental deficiency is greatest in cases of di- and paraplegias where both hemispheres are involved, otherwise there is no direct relationship between the amount of paralysis and the degradation of the mentality. Frequent convulsions are of bad prognosis. Toxic have a better outlook than vascular cases. CHRISTOPHER ROLLESTON.

Involvement of the sympathetic nervous system in diseases of infants (*Monatsschr. f. Kinderheilk.*, 1913, xii, p. 399).—E. Tezner finds in all infants seriously ill a symptom-complex due to hypotonia or atony of the cranio-sympathetic system. In acute intoxications, hypotonia of the sympathetic occurs, and is never absent in pure chronic diseases of nutrition. Premature children have in the first three months a greater tendency to sympathetic hypotonia than children born at term. Sympathetic paralysis is a very unfavourable sign, but exceptionally, in spite of vascular paralysis, recovery is possible. F. R. B. ATKINSON.

Raynaud's syndrome in the child (*Thèses de Paris*, 1913-14, No. 3).—A. Tridon distinguishes four groups. In the first there are only vaso-motor troubles (local syncope and asphyxia); in the second there is slight superficial and limited gangrene; in the third the gangrene is more or less extensive and deep; in the fourth group are placed the doubtful or associated cases. In almost every case the child has had neuropathic antecedents, and the affection has started in the cold weather. In only a few cases have neuritis and endarteritis been found. The theory of vascular spasm is very hypothetical, and is not sufficient to explain the severe cases. A toxi-infective theory seems more probable, auto-intoxication by renal insufficiency, tuberculosis and syphilis being the three most important causes. The thesis contains the histories of thirty-nine cases in children aged from 10 days to 15 years. J. D. ROLLESTON.

Myxœdema following an acute infection in childhood (*Bull. et mém. Soc. m'éd. Hôp. de Paris*, 1913, xxxvi, p. 298).—C. Achard and F. Saint-Girons record two cases: (1) The first symptoms of myxœdema developed in a boy, aged 12 years, after a severe attack of measles complicated by convulsions, and slowly progressed. Some improvement followed thyroid treatment. An attack of typhoid fever at the age of thirty had no effect upon his condition. Death took place at forty from progressive asthenia. At the necropsy the thyroid was completely absent. The only parathyroid that could be found was practically normal. (2) An attack of acute rheumatism in a boy, aged 9 years, was followed by incomplete myxœdema accompanied by symptoms of chronic progressive rheumatism. Wassermann's reaction was negative. The myxœdema was probably associated with rheumatic thyroiditis, but it was difficult to say whether the chronic rheumatism was the result of the acute attack or was a consequence of thyroiditis. Thyroid medication was tried at the age of fifteen, but was not conclusive. J. D. ROLLESTON.

Lesions of the suprarenals in scarlet fever (*Arch. f. Kinderheilk.*, 1913, *Baginsky Festschrift*, p. 397).—V. Hutinel.—Lesions of the suprarenals found post-mortem in cases of scarlet fever that have died with symptoms of suprarenal insufficiency may be of various kinds. Sometimes they are of old standing and consist of more or less extensive caseation of one or both organs. In other cases gross hæmorrhages may be present.

Degeneration and hæmorrhagic changes may sometimes be found microscopically in suprarenals which appear normal to the naked eye (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 32). It is important to bear in mind that in some cases where clinical symptoms, especially hypotension, tachycardia, and asthenia, have suggested suprarenal lesions, histological examination of these organs has been negative, but lesions have been found in other organs, such as the heart, liver, pancreas, thyroid, or hypophysis. The importance of the suprarenals should not be exaggerated.

J. D. ROLLESTON.

Ophthalmology.

Hydrophthalmos (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1103).—**W. Zentmayer** reports three cases of this condition, which is also called buphthalmos or congenital glaucoma. The first was in a coloured child, aged 3 years, whose right eye was large at birth and had increased but little. There was a broad coloboma of the iris in the lower part. The left eye had been gradually growing larger for three months and this was enucleated. It measured 35 by 28 mm. The anterior chamber was very large and contained a watery fluid. The lens was cataractous and dislocated into the anterior chamber. The iris was atrophic and presented a large coloboma below. The ciliary body was markedly atrophic, as were the choroid and retina, though to a less degree. The vitreous chamber was filled with a brownish-yellow fluid, and the nerve was atrophic and deeply cupped. Schlemm's canal was absent, and the angle of the anterior chamber was completely obliterated by connective tissue. The second case was a white child, aged 3 years. Both globes were very large and the tension moderately high. Vision was evidently much affected, as there was nystagmus, and photophobia was extreme. Under ether anaesthesia iridectomy was attempted when the lens and a considerable amount of the vitreous extruded. The eye was lost from the resulting iridocyclitis. Later cyclodialysis was attempted on the other eye by another surgeon, but it failed. Sclerotomy and subsequently iridectomy was performed, but the progress of the disease was unchecked. The third case was a boy, aged 15 months, whose right eye at birth was much larger than the left and had been gradually increasing. The tension was decidedly increased and the cornea hazy. Iridectomy was performed and the wound healed. For nearly three years no change was noticed in the eye, but then marked photophobia supervened in the left eye, although there was no sign of any irritation in either. The right eye was enucleated and the photophobia immediately disappeared. The left eye has been normal in all respects. The enucleated eye measured 32 × 29 mm. The anterior chamber was 5 mm. in depth and contained no fluid. The lens was cataractous. The iris and ciliary body were thickened, and the vitreous chamber was filled with clotted blood. The retina was detached, but there was no apparent change in the choroid nor any appreciable cupping of the disc. Schlemm's canal was absent except at one point, where it was represented by endothelial cells. The optic nerve was atrophic and the disc was slightly cupped microscopically. The essential factor in the production of hydrophthalmos appears to be an absence or incomplete development of the canal of Schlemm, while the presence in the angle of the anterior chamber of prenatal connective tissue is probably a contributing factor. A full account of the symptoms, aetiology and treatment of the condition is given.

T. R. WHIPHAM.

Oxycephaly (*Arch. of Pediat.*, 1913, xxx, p. 820).—**E. E. Cleaver** reports three cases, and considers it a congenital deformity of the skull due to premature ossification of the cranial sutures. It is most frequent in males, may occur in two members of the same family, and may be transmitted to offspring. The mentality is normal in many cases, and is usually associated with eye symptoms, and also in many cases with early appearance of the teeth, peculiarities of elbow and other joints, encephaloceles, epilepsy, and symptoms simulating brain tumour. F. R. B. ATKINSON.

Double congenital coloboma of the lids with symblepharon (*Ophthal. Review*, 1913, xxxii, p. 304).—**P. J. Hay**.—The case was that of a healthy, well-developed girl, aged 4 years and 10 months, in whom the following particulars were noted: The lower lid of the right eye showed a quadrilateral gap in its inner third, which involved the whole thickness of the lid from before backwards, and reached down to the floor of the fornix. The coloboma was lined with normal skin except at its outer end, where the skin was replaced with conjunctiva. The punctum lachrymale was situated and led into a blind lachrymal canal, extending at this end downwards and inwards for a distance of 10 mm. The lashes were confined to the normal portion of the lid, *i. e.* to the temporal side of the punctum lachrymale; there were none on the nasal side. From the bottom of the coloboma a fold of tissue, 5 mm. wide, white near its point of origin, otherwise pink and fleshy-looking, passed on to the globe of the eye, to end at the limbus of the naso-inferior quadrant of the cornea. It was attached to the underlying tissues throughout the whole of its extent. A smaller fold took its origin from the temporal edge of the one just described, and passed downwards and outwards towards the sclera. The upper lid also showed a coloboma, much smaller than the one in the lower lid, and situated more to the nasal side. It was triangular in shape, and involved only the margin of the lid. The lashes were not absent in the gap, but were very fine and few in number. There was no punctum lachrymale. The movements of the eye were quite free. There was no defect in the orbital margin, or the eyebrows, nor was there any other malformation of the eye or face. The cornea, iris, and the appearances of the fundus were quite normal. A section of the fold of skin described showed the ordinary constituents of the skin, with the exception of glands and hair-follicles, which were absent. J. ALLAN.

Congenital bilateral ptosis, epicanthus, and paralysis of the superior rectus (*Gaz. des Sci. méd. de Bordeaux*, 1913, xxxiv, p. 438).—**E. Ginestous** records a case in a female child, aged 25 months. There was no ptosis or other anomaly in the family. J. D. KOLLESTON.

Unequal pupils in several members of a family (*Oph. Review*, 1913, xxxii, p. 323).—**Paderstein**.—Out of a family of five persons the mother, a daughter, aged 14 years, and another daughter, aged 9 years, showed marked differences in the pupils; the father showed a slight difference, as did a daughter of 11. The father had suffered from syphilis, but with this exception the family had no history of any ailment to account for this abnormality, nor was anything discovered on careful investigation. All the reactions were normal. The son of a sister of the mother presented the same peculiarity. J. ALLAN.

Metabolism studies of amaurotic family idiocy, with clinical and pathological observations (*Arch. of Pediat.*, 1913, xxx, p. 825).—**A. Hymanson** describes six cases of this disease. In two cases two brothers

were married to two sisters, and their parents were first cousins; two other cases were twins. Nitrogen, sulphur and phosphorus partitions were conducted on the excreta in two cases, and it was found that the metabolism was not at all affected; if anything the absorption and retention of the various food fractions was above the normal. Autopsy showed the alveoli of the lungs in the hepatised areas filled with exudate consisting chiefly of large blood-cells. The thymus was interspersed with dense strands of connective tissue. A few of the liver-cells were fatty. The spleen, heart and thyroid were normal. The cells of the anterior horn of the spinal cord were much swollen. The same changes were found in the posterior ganglion cells, the cells of the cerebral cortex, basal ganglion, pons and medulla. The optic nerve was made up of numerous small bundles separated by wide spaces. The author believes the intestinal tract and ductless glands require careful study.

F. R. B. ATKINSON.

Orbital varicocele (*Journ. de méd. de Bordeaux*, 1914, LXXXV, p. 196).

—**C. and H. Fromaget**.—A girl, aged $6\frac{1}{2}$ years, had had a slight exophthalmos from birth, which became more pronounced when she laughed or cried—in fact, whenever there was any increase in intra-thoracic pressure and obstruction to the venous return. Nothing was found in the eye, heart, or vessels. The members of the mother's family suffered from varicose veins. Only one other case of orbital varicocele, published by Magnus, has been congenital.

J. D. ROLLESTON.

Subacute exophthalmic goitre in a child (*Med. Chronicle*, 1913, xxvi, p. 113).—**H. T. Ashby** reports the case of a girl, aged 12 years, who presented all the symptoms and characteristics of an advanced exophthalmic goitre. The pulse was very quick and at times uncountable. There was extreme exophthalmos and a rhythmic tremor in the hands. The thyroid was much enlarged and hard. The symptoms commenced four weeks previously and were rapidly becoming worse. Rest, digitalis, belladonna and other drugs were tried with no effect, and in three weeks the patient lost 5 lb. in weight. Thyroidectomy was proposed, but as she was very nervous and excitable the prospect of operation made her worse, and when the time came she was not fit to stand it. When she found that no operation was to be performed she immediately became more quiet. She was then started with thyroidectin, gr. v, three times a day, and improved steadily. She has since gained in weight and is much better.

T. R. WHIPHAM.

The duration of gonococcal ophthalmia neonatorum and its vaccine treatment (*Thèses de Paris*, 1913-14, No. 213).—**A. Klébanski** came to the following conclusions after study of 116 cases treated at the eye clinique of the Hôpital Lariboisière between June, 1906, and January, 1913: (1) The duration of gonococcal ophthalmia neonatorum varies from eight to ninety days; its average is thirty-five days. (2) The earlier the treatment is begun, the shorter the duration of the disease. (3) Combination of argyrol with silver nitrate solution was more effective than treatment by silver nitrate only, since corneal complications occurred in only 16.5 per cent. instead of in 25 per cent. (4) Nicolle and Blaizot's vaccine had no effect on the course or duration of the disease.

J. D. ROLLESTON.

Inclusion blenorrhœa of infants (*Med. Press*, 1913, II, p. 592).—**Sussmann** said that in blenorrhœa of infants gonococci were found in not more than half of the cases. Up to the present, no uniform ætiology was

known in respect of the other half. This lacuna had been filled up by the so-called "inclusion blenorrhœa." In the epithelial cells there were included certain bodies that sat cap-like on the nucleus of the cell, such as were seen in trachoma. From the staining and the different stages one could see that these bodies grew, and that, therefore, they formed a living virus. Originally they were granules embedded in the protoplasm, which at first were coloured blue, but as the isolated granules grew they became red in colour. These bodies were present also in the secretions of the mother. This inclusion blenorrhœa was present everywhere where there was trachoma. Half of the blenorrhœas were inclusion blenorrhœas; mixed infections were rare, but they did occur. The longer incubation period sufficed to distinguish this form of blenorrhœa from the gonococcal. This also explained the occurrence of late attacks. The secretion was not so thick and yellow as in the gonorrhœal form of the disease.

J. ALLAN.

Phlyctenular conjunctivitis (*Med. Officer*, 1914, xi, p. 63).—**F. H. Morison**, reporting to the Cumberland Education Committee on phlyctenular conjunctivitis and keratitis in their schools, suggests that the most rational method of treating these conditions would be to refer the child for a minute clinical examination to ascertain any condition which may be associated with the phlyctenules. He points out that many of these children would undoubtedly be found to react to one of the tuberculin tests, indicating the presence of an associated active or latent tubercular lesion. In treating the condition it is essential, therefore, to keep in mind the presence of associated diseases, as local treatment alone, while effecting a temporary improvement, will not succeed in securing a permanent result. Children suffering from phlyctenular ophthalmia, especially when the cornea is involved, are unfit to attend school, as the phlyctenules are then associated with photophobia and often blepharospasm. The children should be excluded from school and allowed to lead an open-air life, and receive suitable general, as well as local, treatment. At the same time an attempt should be made to improve any unsanitary home surroundings which may exist.

J. ALLAN.

Diabetic cataract in children (*Thèses de Paris*, 1913-14, No. 225).—**Mlle. G. Schapira**.—Diabetic cataract is very rare in children. It appears in the severe or pancreatic forms of diabetes in the cachectic stage. Its principal characters are: (1) It is almost always bilateral. (2) It assumes the soft form. (3) It appears rapidly, and reaches maturity in a few days. Its prognostic value in the child is considerable, as it indicates a fatal issue sooner or later. Operation is not only needless, but even dangerous, owing to the likelihood of pulmonary apoplexy or coma. The thesis contains the histories of ten cases in children, aged from 9 to 15 years—six girls, four boys—including a personal case in a boy, aged 14 years, who had suffered from diabetes for three years, and died of coma four months after the appearance of bilateral soft cataract.

J. D. ROLLESTON.

Frequency and diagnostic significance of optic neuritis in infantile syphilis (*Dermat. Woch.*, 1913, lv, p. 1363).—**S. C. Beck** and **M. Mohr** examined 126 syphilitic infants aged from 8 days to 18 months and found well-marked optic neuritis in 62. It was most frequent in the first three months of life, and then gradually diminished in frequency, but was still

met with in a third of the cases up to the age of eighteen months. The finding of optic neuritis in heredo-syphilis is of considerable diagnostic value. It is one of the most persistent symptoms, and may often be the only one present.

J. D. ROLLESTON.

Golf-ball burn of eye (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 965).—**H. E. Thomason** reports the case of a boy, aged 13 years, who thrust his knife into the centre of a golf-ball, causing a liquid to spurt into the right eye. There was marked swelling of both conjunctivæ, so that the lids were everted. The cornea was milky white, and only perception of light was present. There was agonising pain, for which a 4 per cent. solution of cocaine was instilled. He was sent to hospital, where 1 per cent. solution of atropine sulphate, sterile olive oil and cold applications, followed in twenty-four hours by hot, were applied. On the third day both palpebral conjunctivæ were detached, and on the tenth day the conjunctiva was removed. The epithelial layer of the cornea sloughed on the fourth day and was removed. The lesion resulted in only a slight symblepharon. Vision unaided was $\frac{20}{40}$, and with + 1 spher. was $\frac{20}{30}$. There was a small leukoma on the cornea at the inner canthus. A 5 per cent. dionin ointment was the chief treatment after the acute symptoms had subsided (*BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 521).

T. R. WHIPHAM.

Burn of eyes from contents of golf-ball core (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 2302).—**H. Lowell** states that during the last few years cases of severe permanent injury due to corneal and conjunctival burns have been reported from all over the country. The burns referred to have been caused by the liquid contained in the small rubber core of certain golf-balls which have been cut open by curious children. Almost invariably the history is that some child finds an old golf-ball with its covering partly off. He removes the rest of the cover and rubber, and then comes to the core ball; this he bounces until it bursts, or punctures it with a knife. The contained fluid spurts out on to his clothing and into his eyes. There are apparently two makes of golf-balls on the market, each containing a different highly caustic substance. Dr. R. L. Emerson analysed the semi-fluid mass contained in one of the golf-balls, said to be of similar make to those causing these burns, and found it to contain a mixture of barium sulphate, soap, and a free alkali. Balls of another make have been found to contain a solution in which there is zinc chloride. A girl, aged 9 years, was admitted to the infirmary on September 1, 1911, with a history that three days previous, while she was cutting open a golf-ball core, the contents spurted into the left eye. Vision in right eye was normal; vision in left eye was not obtained, there being so much chemosis and swelling of the conjunctiva, more marked below. The lower fornix was practically obliterated and the cornea was diffusely whitish and hazy. September 3: Corneal condition was the same, but there was marked hypopyon filling about one third of the anterior chamber. The Saemisch operation was done. On September 8 cornea was clearer above, and hypopyon had somewhat decreased. October 12: The cornea was only a little clearer, hypopyon had disappeared, and there was only slight circumcorneal injection. October 14: The case was discharged; vision in the right eye had not been affected; vision in the left eye *nil*. Another girl, aged 11 years, was admitted on October 23, 1912. Previous to this she was treated by a local physician. On October 19, while she was playing with a golf-ball core, it ruptured, and contents spurted into

her right eye. When first seen, the upper lid was bound down to the cornea with cicatricial tissue, which extended the whole length of the lid and was attached below to the lower margin of the cornea. There was much pain and photophobia. The lid was peeled from the cornea, and Cargile membrane covered over the conjunctival surface. On October 28 there was some swelling of the conjunctiva and lids, the cornea was still hazy, and the pupil well dilated. The child, when seen at her home in June, had vision in the injured right eye of 20/200. The cornea was fairly clear toward the periphery, with a very marked central haze. A boy, aged 13 years, was admitted on April 11, 1913. Three days previous he opened a golf-ball core with his jack-knife. His face was not more than a foot from the ball when he opened it, and the fluid squirted into his right eye. In this case the lid was not adherent to the cornea. When first seen, neither the corneal tissue nor the iris could be made out; the whole eye looked as though it was covered by a diphtheritic membrane. There was considerable pain, photophobia, and swelling of conjunctiva and lids. For ten days the condition remained about the same, in spite of the usual treatment. On about the twelfth day the whitish membrane had disappeared, leaving the outer third of the cornea clear. Hypopyon appeared about the sixteenth day, and the Saemisch operation was done. When he left the hospital on May 29 his vision in the good eye was normal; in the right eye, shadows. October 4: His vision was about 20/200 plus in the right eye. The eye was white and quiet. The outer third and upper fourth of the cornea was clear; the rest was densely leucomatous. There was a large symblepharon from lower corneal margin to lower fornix. Another boy, aged 12 years, was bouncing a golf-ball core, April 10, 1913; it burst, and the contained fluid flew into his face and eyes. The next day the cornea in the right eye was slightly hazy centrally; cornea in the left eye was clear. Considerable photophobia, swelling of lids, and conjunctival injection in both eyes. Face was slightly burned around his chin. The left eye became white and quiet in a short time. The right eye cleared up rapidly, and on April 14 the cornea was clear. The burn was apparently most superficial, the deep corneal tissue not being invaded as it was in the foregoing cases.

T. R. WHIPHAM.

Anterior ring of opacity in the lens, following a contusion (Vossius's contusion ring) (*Ophthal. Review*, 1913, xxxii, p. 295).—

G. Coats records the case of a boy, aged 12 years, who, eight days before he was seen, had received a blow on the right eye with a large piece of clay. No wound was visible, but there was a good deal of conjunctival and ciliary congestion, and hemorrhage was present, diffused throughout the aqueous and as a deposit at the bottom of the chamber. The pupil had been dilated with atropin. Examination with transmitted light showed the presence of a small ring of opacity in the centre of the pupil and on the level of the anterior surface of the lens. It measured about a quarter of the diameter of the dilated pupil, or slightly less, probably 1.5 to 2 mm. Its general outline was perfectly circular, but in places there was some scalloping of the edge. With high magnification the opacity could be resolved into granules of extreme fineness; on its outer aspect it was fairly dense and sharply delimited against the clear lens substance; on its inner aspect its edge was much less defined, and, indeed, the whole centre seemed to be occupied by scattered, scarcely visible granules. The circle was complete, but its breadth varied, being greatest upwards and inwards. The opacity, while plainly visible by transmitted light, was extraordinarily difficult to see by oblique

illumination; occasionally one seemed to catch a glimpse of a brown ring, but it was impossible to focus anything sharply with the loupe. Nothing pathological was visible in the fundus, and the other eye was normal. Three days later the blood had been absorbed and vision was $\frac{6}{5}$. The pupils were equal and active; no ruptures of the sphincters. The opacity had become a little lighter, but was still clearly visible. It was impossible, however, to see any trace of it with the loupe. The author gives a brief *résumé* of the literature on the subject.

J. ALLAN.

Secondary buphthalmia treated by the trepanation of Elliott (*Journ. de Méd. de Bordeaux*, 1914, LXXXV, p. 142).—H. Fromaget describes the case of a girl, aged 12 years, suffering from this condition as the result of an accident to the eye. A glaucomatous process occurred, but was immediately arrested by Elliott's operation.

F. R. B. ATKINSON.

Errors of refraction in school-children (*Lancet*, 1914, I, p. 450).—A. S. Percival emphasises the fact that the examination should be carried out in a systematic manner. Children may be divided into two classes—those who do, and those who do not know their letters. The first step should be to examine each child's eyes with the large lens for focal illumination in one hand, and a spring watch-maker's glass in your eye so as to see whether any corneal trouble is present—ulcers, nebulae, etc.—or whether there is any haziness of the pupil that may be due to lamellar cataract. In the case of illiterate children dilate the pupil with homatropine and estimate any error of refraction by means of retinoscopy. Children who can read should first be tested with test-types which are placed a distance of six metres, each eye being tested separately. The pin-hole diaphragm test is a valuable test of an error of refraction, because whenever the visual acuteness of a person is increased by looking through a pin-hole it is absolutely certain that his defective sight is due in part, if not entirely, to an error of refraction. If the defective sight is not improved, or if the vision becomes less, it is certain that there is some other defect in the eye. It may be opacities in the media, choroiditis, choroidal atrophy, or something wrong with the optic nerve or with the brain, as in amblyopia. The author gives some general directions for the treatment of myopia, hypermetropia, astigmatism, and anisometropia, and concludes with some remarks regarding retinoscopy.

J. ALLAN.

Squint and its correction (*New York State Journ. Med.*, 1914, xiv, p. 40).—J. J. O'Brien points out that at present the most accepted explanations of the aetiology of strabismus are the accommodation theory of Donders and the fusion theory of Worth, but neither furnish a satisfactory explanation of all cases of strabismus. The first step in the treatment is to correct, under atropine, any refraction error in both eyes within from a quarter to three quarters of a dioptré of the full correction. The less the error the nearer should the prescription call for the full correction. This should be constantly worn. Children are never too young to wear glasses when they are indicated. The proper correction of the refractive errors in a surprisingly large number of cases of both convergent and divergent squint will be all that is necessary to effect a permanent, complete cure. When this fails recourse may be had to other agents, which in order of importance are (1) instillation of atropine into the fixing eye; (2) occlusion of the

fixing eye; (3) training the fusion sense and operation. The objects of treatment are to arrest the diminution of and bring back the vision to the squinting eye and restore the visual axes to normal. In cases where simpler remedies fail operation is indicated, and the one giving the best results is advancement with or without tenotomy of the opposing muscle. Very high degrees of squint require tenotomy.

J. ALLAN.

The small type of school Bibles ('*Med. Officer*,' 1914, XI, p. 20).—**Lydia Towers** mentions that although much has been done within recent years to improve the type employed for text-books in schools and to adapt it to the varying ages, the school Bible seems so far to have escaped attention. She makes the following definite recommendations for consideration: (1) The total abolition of books for the teaching of reading amongst school-children under six years of age, and the substitution of black-boards, wall-charts, etc.; (2) the adoption of the standard of the British Association as regards all new books; (3) the substitution of books conforming to this standard for old ones as quickly as practicable; (4) the prevention of needle-work or any work requiring eye strain under eight years of age; (5) the discouragement of very fine needlework in school.

J. ALLAN.

Surgery.

Surgery of the thymus gland: thymectomy ('*Amer. Journ. Dis. Child.*,' 1913, v, p. 89).—**C. A. Parker** gives an account of a case in which he performed thymectomy, and discusses the anatomical, physiological and pathological aspects of the thymus gland. Many sudden deaths in infants have been caused by an enlarged thymus producing obstruction of the trachea. Frequently this is the sole factor responsible for the compression, but at times enlarged tracheo-bronchial glands or spasm of the glottis are contributing factors in producing the fatal result. Compression of the trachea is shown at autopsy by the presence of a flattened trachea associated with the enlarged thymus, and is revealed *intra vitam* by the bronchoscope showing the narrowed lumen of the organ, the symptoms referable to which are completely relieved by thymectomy. The diminished calibre has also been demonstrated by intubation, a long tube being necessary to keep the trachea open. Two general types of cases occur, the continuous type in which the symptoms usually date from birth or soon after, permanent dyspnoea being usually present, and the intermittent type, usually of later development, in which there are longer or shorter intervals free from symptoms. The three most important symptoms in either type are permanent dyspnoea, recurring suffocative attacks and stridor. All three frequently occur together, when their presence is an imperative indication for immediate operation. The presence of either of the first two also calls for surgical interference, but stridor alone is not an indication for thymectomy. An enlarged thymus may cause an arching forward of the manubrium sterni, or the presence of a soft tumour in the suprasternal notch during expiration (Rehn's sign). Percussion of an hypertrophied gland is difficult, but may show an increase of the normal triangular dullness, the base of which extends from the right sterno-clavicular joint to 6 mm. beyond the sternum on the left, the apex being at the level of the second rib. The position of the apex may vary as much as an interspace according as the neck is flexed or extended (Bogg's sign). The X rays may also aid in

diagnosis. The treatment is essentially surgical, and thymectomy is best performed by Veau's operation. An incision 4 to 5 cm. long is made in the middle line of the neck terminating just below the upper border of the sternum and extending to the deep fascia, which is cut through, exposing the sterno-thyroid muscles. These are separated, and in the lower part of the wound the upper portion of the thymus is seen through a thin hernial sac. The capsule is then lifted up and incised, when the gland projects and can be withdrawn. It may then be tied off at its more fixed position near the sterno-clavicular junction, where it is joined by the nutritive branches of the internal mammary arteries. The wound is closed with deep stitches of catgut and superficial sutures. The operation appears not to be fraught with any untoward metabolic disturbances, probably owing to the fact that the gland is never completely removed, and that the remaining portion quickly reproduces the tissues of the organ. It may also be in man, as in the lower animals, that after a certain period of growth its function is taken up by other organs, as the thyroid and spleen. The author gives a detailed analysis of all the recorded cases up to date—fifty in all. Of these, seventeen died; four deaths followed a complicating tracheotomy, and one an unclosed wound with drainage and infection; four were due to infection from septic tracheo-bronchial glands. In one there was a preliminary bronchoscopy, and in another there had been several unsuccessful attempts at tubage immediately preceding the operation. In three cases with incomplete histories the operator expressly states that death was not due to the operation itself. One was a severe case of Little's disease, and in two cases death occurred several weeks after the operation from causes remote, if not entirely separate from the operative procedure. In no case was the operation immediately fatal.

T. R. WHIPHAM.

Multiple myelomata in a boy, aged 5 years (*Rev. Soc. Méd. Arg.*, 1913, xxi, p. 744).—P. E. de Elizalde and J. Llambias.—The disease known as multiple myelomata is characterised by the presence of tumours confined to the skeleton, especially the ribs, vertebral column and skull, accompanied by general phenomena of varying importance in different cases, and often by the presence of Bence Jones' substance in the urine. The disease is rare even in adults, and the present case is the first reported in a child. The patient was admitted to hospital with flaccid paraplegia, the first symptoms of which had developed a month previously, and died about six weeks after admission. The necropsy showed myelomata of the ribs, dorsal vertebrae, right orbit and suprarenal. The tumours were mainly composed of lymphoid cells.

J. D. ROLLESTON.

Hydatid of the brain (*Austral. Med. Journ.*, 1914, iii, p. 1387).—T. F. Ryan describes a case of this disease in a child, aged 6½ years. The cyst occupied a large part of the left cerebral hemisphere. Operation removed the cyst, and all the symptoms disappeared.

F. R. B. ATKINSON.

Cisterna-sinus drainage for hydrocephalus (*Arch. of Pediat.*, 1913, xxx, p. 670).—I. S. Haynes.—A child, aged 13 months, was successfully operated on for this disease by the author's method, published in the *'Annals of Surgery,'* April, 1913.

F. R. B. ATKINSON.

Reviews.

THE FÆCES OF CHILDREN AND ADULTS. By P. J. CAMMIDGE, M.D.
Bristol: John Wright & Sons, Ltd., 1914. Pp. 516, with 13 full-page
Plates, 7 of which are coloured, and 96 Illustrations in the text. Price
17s. 6d. net.

DR. CAMMIDGE tells us in the preface that it was originally intended that he should prepare a translation of Hecht's 'Die Fæces des Säuglings und des Kindes,' but that on consideration it was thought that a book of wider scope dealing with the fæces of both adults and children would be more generally useful. In writing such a book the author acknowledges his indebtedness to Hecht's and Schmidt and Strasburger's works, but much of it is obviously original and the outcome of his own researches, which are now so widely known. The result is a book of great value and practical utility, as it deals with a subject which is not sufficiently studied, and about which little, as a rule, is known.

The opening chapters deal with the general characters of the fæces, their macroscopic and microscopical examination, and the animal parasites which are found in them. The illustrations in this portion of the book are admirable and greatly enhance the value of the text.

The chapters on bacteriology and chemical analysis are full of useful information, and contain details of the cultural and staining methods for bacteria and of chemical tests for the various abnormal constituents of the fæces. The section on fats in connection with pancreatic and other diseases must be specially mentioned and deserves careful perusal. An account of the different forms of calculi and concretions which are met with in the fæces includes a short but interesting section on intestinal sand, a condition seldom recognised in this country, but more common, or at all events more commonly reported, on the Continent. This brings what may be termed the first half of the work to a close.

The second part commences with a consideration of the diagnostic value of examinations of the fæces. The characters of the stools produced by different forms of diet and the changes which occur in them as the result of various intestinal disorders are dealt with in a very lucid manner. There are also important sections on the fæces in cases of pancreatic disease and of jaundice. Then follows a chapter on indications for treatment, which includes a consideration of diet and the various constituents of food, cooking, general hygiene, etc., followed by a detailed description of the dietetic treatment suitable for cases of gastric, intestinal, pancreatic and hepatic derangement. In cases of gastric ulcer the author evidently favours feeding by the mouth earlier than in the strict von Leube method, but not so soon as Lenhartz advises. From the section on drugs useful hints may be gleaned as regards purgatives and intestinal antiseptics. The book ends with a long appendix of diet schemes, which is supplementary to the text, and there is a full index.

The book should prove invaluable not only to the clinical pathologist, but also to the pure clinician, containing, as it does, a wealth of information on a subject to which, as we have said, too little attention is as a rule paid. It is well printed on art paper and the illustrations are excellent. A noteworthy feature is the inclusion of a bibliography at the end of each chapter.

T. R. W.

GUIDE TO THE MICROSCOPIC EXAMINATION OF THE EYE. By Prof. R. GREEFF, Director of the University Ophthalmic Clinique in the Royal Charity Hospital, Berlin; with the co-operation of Prof. Stock (Freiburg), and Prof. WINTERSTEINER (Vienna). Translated from the Third German Edition by HUGH WALKER, M.A., M.B., C.M., Ophthalmic Surgeon to the Victoria Infirmary, Glasgow. London: The Ophthalmoscope Press, Thayer Street, W. Price 7s. 6d. net.

There can be no doubt that in this country the microscopic examination of the eye is a branch of ophthalmology somewhat neglected by the ophthalmic surgeon. It would be to his advantage to embrace every opportunity of becoming acquainted with the finer microscopic structure of the eye and thus be able to demonstrate the necessity for the operative treatment he may have undertaken. It cannot be expected that he will be so proficient in staining methods as the expert pathologist, but he can with practice do the work sufficiently well for his own requirements. The chief aim of this book is to show that a satisfactory examination of the eye can be made without elaborate instruments or numerous reagents.

After describing the necessary minimum equipment for such work the author discusses methods of fixing and hardening, imbedding processes, staining and mounting of specimens. He does not believe in following one particular method in this connection, and he, therefore, affords the reader ample scope for choice, although it would seem that one or two newer methods have been overlooked. In the second part of the book the staining, etc., of special parts of the eye, such as the cornea, iris, retina, etc., is examined. An appendix is devoted to the examination of the secretions and bacteria of the eye, including trachoma corpuscles.

We have read the book with pleasure and profit, and we can testify to the able manner in which the various points have been discussed. We have no hesitation in saying that the book should find a place in the library of anyone who wishes to take an intelligent and scientific interest in ophthalmic work.

J. A.

SEXUAL ETHICS: A STUDY OF BORDERLAND QUESTIONS. By ROBERT MICHELS, Professor of Political Economy and Statistics in the University of Basle, and Honorary Professor in the Faculty of Law in the University of Turin. London and Felling-on-Tyne: The Walter Scott Publishing Company, Ltd., 1914. Price 6s. net.

"ALL sexual relationships are subordinated to Kant's moral law, in accordance with which no one must be considered merely as the means to the end of another" (p. 41).

This sentence may be regarded as the keynote of this work, which forms a valuable contribution to the study of the sexual question.

The book, which is a recent addition to the well-known Contemporary Science Series edited by Mr. Havelock Ellis, is divided into four main parts: (1) General borderland problems of the erotic life. (2) Borderland problems of the extra-conjugal erotic life. (3) Preconjugal borderland problems. (4) Borderland problems of the conjugal sexual life. There are two preliminary chapters, one of which contains remarks on erotic literature and terminology, from which we may quote the following:

"Eighty per cent. of the literary products of the sexual order which are exposed for sale might be committed to the flames without hesitation, and

without giving the watch-dogs of democracy the right to accuse of high treason against art those who destroy such garbage."

In the other preliminary chapter the writer discusses the question as to whether sexual enlightenment should be given in the school by the teachers or medical men or in the home, and decides in favour of the latter. School-teachers, he thinks, lack the necessary knowledge, and are unable to give unprejudiced instructions, while doctors are utterly devoid of the teaching faculty, are too materialistic, and only endeavour to inculcate a fear of syphilis and other results of sexual indulgence.

He concludes that sexual enlightenment should be gradual and not effected suddenly at puberty. It should be essentially negative in character, all fables, false statements, and needless mystery being avoided.

Of special interest in the body of the work are the chapters on the prostitute as the "old maid" of the proletariat, the value and limits of chastity, and the physical basis of love.

Though by no means a blind adherent of neo-malthusianism, the writer is of opinion that sexual love is justified as an end in itself, and that consciously regulated sexual intercourse possesses complete ethical justification.

The work is eminently readable, and contains, in addition to the writer's personal observations, numerous quotations from scientific and belletristic literature.

J. D. R.

REPORT OF THE PROCEEDINGS OF THE ENGLISH-SPEAKING CONFERENCE ON INFANT MORTALITY. London: National Association for the Prevention of Infant Mortality and for the Welfare of Infancy. Pp. 456. Price 3s. net.

THE Conference, whose proceedings are published in this volume, met in London in August, 1913, under the Presidency of the President of the Local Government Board. The 'Proceedings,' containing the addresses, papers and discussions of the Conference, show how well the Conference was organised. For evidence is given of the subject of infant mortality having been considered and discussed from almost every standpoint; and sociological and sanitary views are brought forward as well as matters of more purely medical interest.

In the Presidential address attention was paid to the influence on infant mortality of the employment of mothers of young families. Although many speakers touched upon this subject and deplored the results of such employment, we regret that no paper was read dealing fully with this question. To our mind it is a matter upon which the formation of a sounder public opinion and a more delicate national conscience is very essential at the present time. Doubtless on some future occasion this subject will be more fully discussed.

The volume is one which is very well worth possessing, for a great deal of useful information is to be found in it. The index is adequate, but perhaps in a volume of such a variety of contents might be usefully made still more detailed.

The 'Proceedings' can be obtained from the office of the Association, 4, Tavistock Square, W.C.

R. M.

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Original Articles.

INTRAMUSCULAR INJECTIONS OF ANTITOXIN IN THE
TREATMENT OF DIPHTHERIA.

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HISTORICAL NOTE.

INTRAMUSCULAR injections of drugs were first employed about forty years ago, when it was found that deep injections of mercurial salts into the gluteal regions were less painful and less likely to give rise to abscesses than the subcutaneous method which had been recently introduced by Scarenzio in the treatment of syphilis. Other drugs, such as digitalis, camphor and quinine, were subsequently given intramuscularly for the same reasons. It was not, however, until intramuscular injections had been in use for nearly thirty years that Meltzer and Auer (17), of the Rockefeller Institute, New York, by experiments on rabbits and guinea-pigs with curare, fluorescein, morphine and adrenalin, showed that intramuscular injections were more rapidly absorbed than subcutaneous. Hitherto it had been supposed that absorption from muscles was slower than from subcutaneous tissue, owing to the comparative scarcity of lymphatics in the muscles. Subsequently physiologists proved that absorption of

fluid occurred primarily through the wall of the blood-capillaries, and only exceptionally through the lymphatics.

Meltzer and Auer suggested that the more rapid absorption from muscles was due to the unit of space in muscles containing more blood and more blood-vessels, and, therefore, taking up more liquid injected into it in a unit of time.

Further experiments by the same writers (18), published six years later, disproved the objection that the more rapid absorption was due to the needle having entered into the lumen of a vein.

The credit for the first experimental work on the comparative absorption of diphtheria antitoxin by intravenous, intramuscular and subcutaneous routes is to be given to Prof. Morgenroth, of Berlin (21). In conjunction with R. Levy (22), he showed that absorption of a colloid solution, such as diphtheria antitoxin, was subject to just the same conditions in the subcutaneous tissue and muscles as Meltzer and Auer had shown to apply to crystalloid solutions, viz. delayed absorption after subcutaneous injection, and rapid absorption after intramuscular injection.

The highest antitoxin value in the blood was naturally found after intravenous injection, but even after eight hours this concentration was found to have diminished, whereas in intramuscular injections, after eight hours, the antitoxin content of the blood came very close to that after intravenous injection. In four to five hours the antitoxin content with intramuscular injection was five to twenty times, and in seven to eight hours at least three to ten times, that after subcutaneous injection.

Confirmatory experiments were performed by Levin (14), who found that absorption of diphtheria antitoxin in goats occurred much more quickly with intramuscular than with subcutaneous injections.

This difference was particularly marked during the first few days, as the antitoxin concentration reached in the blood after ten hours was fourteen times greater after intramuscular than after subcutaneous injections.

Morgenroth's investigations induced clinicians to give intramuscular injections of antitoxin in the treatment of diphtheria, and this method was first used in E. Neisser's clinic at Stettin, as will be seen from Gabriel's paper published in 1909 (11).

Since then, intramuscular injections have largely superseded subcutaneous in German hospitals, as reference to the writings of Baginsky (1), Bauer (3), Blühdorn (6), Eckert (8), Hoesch (13), Lorey (16), and Schreiber (26) will show. Ganghofner (12), of Prague, and Feer (9), of Zürich, have also recently adopted the

method. So far, however, to judge from the literature,* the practice of intramuscular injections of diphtheria antitoxin has been confined to German-speaking countries. As regards the site of injection, Gabriel, Eckert, Berlin, and Hoesch use the gluteal region, while Baginsky, Feer, and Ganghofner, following the advice of Morgenroth Levy, prefer the outside of the thigh.

A recent visit by one of us (J.D.R.) to Prof. Schlossmann's clinic at Düsseldorf, where we were assured by Dr. J. Bauer of its harmlessness and simplicity, induced us to make a trial of the method. The present paper is based on our experience of the last six months, during which period, thanks to the collaboration of our colleagues, intramuscular have entirely supplanted subcutaneous injections at the Grove Hospital.

In all, 412 injections have been given to 339 patients, whose ages ranged from two weeks to thirty-seven years, but only 35 were above the age of fifteen years. After subtracting 33 cases still under treatment, as well as 45 patients who, after injection, were found not to have diphtheria, 261 completed cases of diphtheria, to whom 324 injections were given, are left. Fifteen died, a mortality of 5·7 per cent., which is reduced to 4·6 per cent. on excluding 3 cases who died within twenty-four hours of admission.

CLASSIFICATION AND DOSAGE.

The cases have been classified according to the localisation of the membrane and the character of the attack, as follows:

TABLE I.—*Classification of Cases.*

1. <i>Faucial cases with or without nasal or laryngeal involvement:</i>							
Severe	.	.	.	.	.	.	67
Moderate	.	.	.	.	.	.	45
Mild	.	.	.	.	.	.	117
2. <i>Nasal cases only:</i>							
Mild	.	.	.	.	.	.	17

* We are indebted to Dr. Germain Blechmann for informing us that intramuscular injections of antitoxin are not employed in any of the children's hospitals in Paris. Dr. C. B. Ker, however, in a letter dated February the 13th, 1914, informs us that he has been using the method exclusively at the City Hospital, Edinburgh, for the last six months, owing to the recommendation of the practice in the new edition of Baginsky's book. Lastly, Dr. Brückner, Medical Superintendent of the Dresden Children's Hospital, writing on May the 3rd, 1914, tells us that for the last year he has given diphtheria antitoxin intramuscularly and occasionally intravenously as well.

3. *Laryngeal cases only :*

Severe	9
Moderate	2
Mild	2

4. *Conjunctival only :*

Mild	1
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5. *Aural only :*

Mild	1
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Total 261

The severe faucial cases received from 16,000 to 20,000 units on admission, usually the same, but sometimes a smaller dose, being repeated if necessary on one or two of the following days. The moderate faucial cases received from 8000 to 12,000 units on admission, the same dose being occasionally repeated on the following day. The mild faucial cases received from 4000 to 8000 units, and it was rarely found necessary to repeat the dose.

The cases of nasal, laryngeal, conjunctival or aural diphtheria in whom there was no faucial involvement, and consequently little, if any, toxæmia, received from 4000 to 12,000 units. Table II shows the total amount of antitoxin given in each case.

TABLE II.

Doses.	Cases.	Remarks.
4,000	40	
8,000	97	1 death on forty-fifth day from glottic spasm.
12,000	56	3 deaths, 2 from toxæmia within twenty-four hours of admission, and 1 from broncho-pneumonia.
16,000	18	
20,000	15	2 deaths, 1 from toxæmia, 1 from cardiac paralysis.
24,000	10	1 death from glottic spasm.
28,000	10	4 deaths from toxæmia, 1 within twenty-four hours.
32,000	7	2 deaths from toxæmia.
36,000	3	All recovered, and none had any rash.
40,000	4	2 deaths from toxæmia. One of the survivors had palatal palsy only, the other no complications. Neither had any rash.
44,000	1	Recovery with palatal palsy only. No rash.

The average dose for each patient was 12,459 units—a dose slightly below the average used in the Board's hospitals, in which, since 1908, the average dose has ranged from 14,571 to 17,328 units (27).

Our dosage for intramuscular injections has indeed been decidedly smaller, especially in severe cases, than it had been for subcutaneous. In a paper published by one of us in the Board Reports for 1908 (23), it will be seen that out of 78 hæmorrhagic cases, 40, of whom 7 recovered, received doses varying from 42,000 to 72,000 units; while out of 22, who received less than 33,000 units, none recovered. With intramuscular, as with subcutaneous injection, the frequency of rashes and other serum phenomena, in spite of large doses, is less than usual, as is the rule in severe diphtheria.

The principal objection to large doses is their expense. Baginsky (2) calculates that an injection of 40,000 to 50,000 units costs from fifty to eighty marks. In the Board's hospitals, however, when the cost per 1000 units is but sixpence halfpenny, the expense would be less than half that amount. Although experimental evidence in favour of large doses of antitoxin has been brought forward by Dönitz (7) in 1899, and more recently by Fritz Meyer (19), most of the German authorities give relatively small doses. Thus Baginsky (1) gives 1500 units in mild cases and only 3000 to 4000 units in severe cases. The most that he has ever given has been 15,000 units. Similar doses are recommended by Bauer (3), Feer (9), Gabriel (11), Ganghofner (12), Hoesch (13), Lorey (16), and Schreiber (26). Eckert, assistant to Heubner at the Charité in Berlin, alone has employed such enormous doses as 36,000, 42,000, 53,000 or 64,000 units.

TECHNIQUE.

Without preliminary washing the outer side of the thigh in its middle third is painted with a 2 per cent. solution of iodine, the needle is driven deep into the body of the vastus externus, and the injection is given in the ordinary way. Twenty thousand units (= 50 c.c.) can be readily injected even in small children, but we have never exceeded this dose at one time. Our youngest patient, aged 2 weeks, received 4000 units for nasal diphtheria without any ill-effects. It is not necessary to follow Morgenroth and Levy's advice to aspirate before injecting in case a vein has been punctured. Directly the needle has been withdrawn after injection, the site of puncture is again painted with the iodine solution and a collodion scab is applied.

The choice of the thigh in place of the abdomen, the usual site for subcutaneous injection, facilitates examination of the liver, which, as one of us has previously shown (24), should form part of the routine examination of every severe case of diphtheria, but is often rendered difficult by the excessive tenderness due to the injection.

The thigh is to be preferred to the gluteal region not only because there is less probability of injuring important vessels or nerves, but also because the thigh muscles are much more compact and exercise greater pressure on the injected fluid, rendering absorption more rapid.

Intramuscular injection of antitoxin is thus quite as simple as subcutaneous, and infinitely less troublesome both to doctor and patient than the intravenous method, over which it offers this further advantage—that an antitoxin free from antiseptic is not required. A still more important fact which has been ascertained by Morgenroth and Levy is that by the intramuscular method for the first few days after injection a fairly uniform and high concentration of antitoxin in the blood is effected, whereas after intravenous injection even at the end of twenty-four hours about two thirds of the antitoxin have already disappeared from the blood.

Not only is the actual injection much less painful, but the subsequent pain, which often causes a restless night and persists for two or three days after subcutaneous injection, is ill-marked and often entirely absent. On this point our observations have been confirmed by the unanimous testimony of nurses both in the receiving room and in the wards.

Fomentations, which used to be applied in a large proportion of all cases injected, are rarely required now.

Rashes and other serum phenomena occur at about the same time and present the same features after intramuscular as after subcutaneous injection. When the injection has been made in the vastus externus, urticaria first appears on the thigh, and subsequently either becomes general or remains localised.

Several cases gave a history of a previous attack of diphtheria within recent years, for which they had been injected subcutaneously; and three had a relapse while under treatment in hospital. None showed any symptoms of anaphylaxis as the result of reinjection, an accelerated reaction being merely observed in some, but not all the cases.

Table III shows that the frequency of serum phenomena after intramuscular injection is about the same as that set forth in the Board's Annual Reports since 1905, when a marked drop in their incidence took place.

TABLE III.—*Frequency of Serum Phenomena.*

	Cases.	Percentage.
Urticaria	90	34·4
Circinate erythema	25	9·5
Pyrexia	33	12·6
Joint pains	15	5·7
Adenitis	7	2·6

Abscesses at the injection site, the frequency of which in the Grove Hospital cases has varied during the last ten years from 0·2 to 1·4 per cent., did not occur in any of the 339 injected.

As regards the rapidity with which membrane disappeared from the fauces or laryngeal symptoms subsided, there was no appreciable difference between the subcutaneous and intramuscular methods, but it is noteworthy that several observers (Berlin (4), Beyer (5), Fette (10), Mixsell (20), and Schreiber (26)) have said the same of intravenous as compared with subcutaneous injections. The incidence of albuminuria after intramuscular injection was also about the same as usual. Otitis occurred in 10 cases, and broncho-pneumonia in 3. Of chief interest, however, was the incidence of paralysis. Of the 261 cases, 33, or 12·6 per cent., showed some paralysis, but only two of these were severe. Eighteen were examples of palatal palsy, usually shown by a nasal voice only without regurgitation of fluids, 8 of ciliary palsy, 1 of squint only, 2 of palatal palsy and squint, 2 of palatal and ciliary palsy, 1 of cardiac palsy which died, and 1 of palatal pharyngeal and diaphragmatic palsy which recovered.

We are inclined to think that life might have been saved in the one case and the paralysis have been rendered less extensive in the other had larger doses of antitoxin been given during the acute stage. Though the total number of cases is too small to be absolutely conclusive, the comparatively low rate of paralysis, especially of a severe character, in the present series is worthy of note, and is in striking contrast to the higher incidence noted by one of us (25) in a study of 2300 cases treated by subcutaneous injection, of whom 477, or 20·7 per cent., had some form of paralysis with 181 severe and 85 fatal cases.

The mortality, especially considering the high percentage of severe cases, was remarkably low, but here again a larger number of cases is required before a definite conclusion can be drawn.

Of the 15 deaths, 13 took place before the throat became clean, 11 being due to toxæmia, 1 to broncho-pneumonia, and 1 to cardiac

paralysis. The remaining 2 deaths occurred on the ninth and forty-fifth days respectively in tracheotomy cases and were apparently due to spasm of the glottis.

Our results appear to be sufficiently encouraging to justify the continuance of this method of antitoxin administration to the exclusion of any other, and it is with the hope that the method may receive more general recognition that this paper has been written.

SUMMARY.

Intramuscular injection, preferably in the vastus externus, deserves to supersede all other methods of administration of antitoxin in the treatment of diphtheria for the following reasons :

(1) It is quite as simple as the subcutaneous method, ensures much more rapid absorption, is less painful, and less liable to give rise to abscesses at the injection site.

(2) It is superior to the intravenous method, not only in the greater simplicity of its technique, but also in the less rapid excretion of antitoxin after injection.

(3) The more rapid absorption of antitoxin by the intramuscular route is shown, not by the effect on the faucial or laryngeal process, but by the lesser incidence of paralysis, especially of a severe kind.

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SALVARSAN AND NEO-SALVARSAN IN THE TREATMENT OF HEREDITARY SYPHILIS.

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THE claims of arsenical preparations, such as salvarsan and neo-salvarsan, to displace mercury in the treatment of all cases of congenital syphilis still lack support in a good many quarters, and the reason is quite obvious. Mercury is an old and well-trusted remedy, it is easily administered, and its beneficial effects are in many cases speedily seen. But in certain other cases, where treatment has been omitted until the patient is practically in a hopeless condition, where the symptoms are exceptionally acute, or fail to respond to mercurial treatment, quite brilliant results can sometimes be obtained by the use of arseno-benzol or its derivative. The mortality of congenital syphilitics is often overlooked, but the records of nearly two thousand syphilitic pregnancies collected by Hyde leave us under no misapprehension. Of these 1700 pregnancies, 1535 resulted either in abortion or death before the end of the first year, and it has been estimated that as many as 99 per cent. of artificially reared syphilitic infants die within the first twelve months. The percentage of cases treated by mercury is of course not recorded by the registrar, but it is probable that quite a large number of these cases were so treated, and these statistics show that some other additional method—a more successful method—is needed for their treatment.

Since the introduction of salvarsan and neo-salvarsan the literature dealing with their successful employment in adults has become almost unmanageable, and quite an appreciable number of papers has been written about their employment in congenital syphilis.

At first, of course, in congenital syphilis, salvarsan was used, and it was injected intramuscularly, and my experience of this I recorded in the 'Practitioner' of July, 1911 (2). Afterwards it was injected intravenously. Some of the most interesting results obtained by this method are those of Holt and Brown (5), who in fifteen months treated thirty-four cases by intravenous injection of salvarsan only. The ages of the patients were from one month to four and a half years. The second dose was given fourteen days after the first, and subsequent doses at intervals of one to two months, according to whether the Wassermann reaction proved positive or negative. In their cases the reaction was, previous to treatment, always positive, and the average date of its becoming negative was three and a half months. Of the thirty-four cases, syphilis *per se* was responsible only for the death of five patients, but eighteen died from inter-current diseases. The beneficial effects of salvarsan were most marked in the case of skin lesions.

Noeggerath (10) recommends the intravenous injection of concentrated solutions of salvarsan in infantile syphilis. He employs Weintraut's alkaline solution and injects it into the cranial veins, on account of the difficulty of injecting it into the veins of the arm without exposing them by operation. The difficulty lies in the possibility of escape of salvarsan into the tissues by penetration of a vein owing to the movements of the child. The concentrated solution contains 0.1 gram. of salvarsan in 2 c.c. and can be injected with a Pravaz syringe. The minimum efficacious dose is said to be 2 mg. per kilogramme of body-weight, but the dose should be increased whenever possible up to 0.1 gram. for each injection. Secondary unfavourable effects he seldom saw. Out of twenty-eight cases treated nine died.

La Fétra (6) treated twenty-five cases of hereditary syphilis in 1912, and of ten cases treated with salvarsan, with or without mercury, two died, while the others gained in weight and the syphilitic symptoms disappeared. Fifteen were treated with mercury alone, and of these, ten died, three improved, and two did not improve.

Andronescu (1) treated six cases of hereditary syphilis by direct injection into the infant, with success in four cases, aged respectively 1 month, 6 weeks, 7 months, and $4\frac{1}{2}$ years.

Maccone (8) records ten cases in children aged 18 months to 12 years treated by salvarsan. Five recovered, four showed improvement, and in one there was no change. For infants he recommends intramuscular injection into the buttocks and intravenous injection for older children.

E. Welde (13) treated twenty-six cases with salvarsan, injecting it beneath the skin of the back in 1 to 3 c.c. of oil or other fluid. This, however, he found gave so much pain, that in the last ten cases he tried to inject it intravenously, but was not always successful. A few were injected intramuscularly. The results of the injections were good.

G. S. Strathy and G. A. Campbell (12) record the results of treating eighteen cases of late hereditary syphilis with salvarsan; and of these patients seventeen were injected intravenously, one intramuscularly. All improved clinically: gummata, periostitis and ulcers disappeared rapidly, while keratitis improved more than with mixed treatment. The results were better than those obtained with mercury, which had already been used in more than half the cases.

Good results from direct injection of the child with salvarsan have also been reported by Escherich (4) (6 cases), Lesser (7) (9 cases), Miekley (9) (5 cases), and Simpson and Thatcher (11) (40 cases).

I discussed fully the injection of salvarsan intramuscularly and intravenously in the *BRITISH JOURNAL OF CHILDREN'S DISEASES* for April, 1912 (3), but, since then, I have preferred to use neo-salvarsan.

The ease with which salvarsan ("606") combines with the hydrochlorides of various metals guided Ehrlich in his attempts to find a more soluble and non-toxic substitute, and this has, as we know, been placed on the market under the name of neo-salvarsan ("914").

The yellow powder is rapidly soluble in water, giving a perfectly neutral solution of a yellowish tint. The preparation of the injection fluid is therefore quite simple, and the neutralisation with soda, which had to be accurately carried out in a case of the old salvarsan, is now no longer necessary.

It is quite possible that some of the disagreeable after-effects which occasionally followed the use of the salvarsan were due to the soda employed, which was not easy to obtain chemically pure and frequently contained potash or ammonia, and, moreover, was difficult to keep perfectly sterile.

It is obvious, therefore, that an advantage is gained in not having to neutralise with soda in the case of neo-salvarsan. But the oxidation products of neo-salvarsan are toxic, just as are the oxidation products of salvarsan, and it is necessary to inject the solution immediately it has been prepared, and, moreover, not to warm the solution after it has been made. I find that the injection of a quite cold solution is disagreeable to the patient, so I make a practice of warming the salt solution to a temperature of 65° F., and then adding the neo-salvarsan. The injection fluid can be quite well

prepared with sterile feebly distilled water, or even boiled tap-water, but such a solution is somewhat hypotonic and occasions slight hæmolysis, so it is better to employ a sterile 0·4 per cent. saline solution made with freshly distilled water. The quantity of fluid must be calculated on the basis of 25 c.c. to each 0·15 gm. neo-salvarsan for intravenous injection. For intramuscular injection only 3 c.c. of freshly distilled water are required for each 0·15 gm. and this gives an approximately isotonic solution. Of course much more concentrated solutions of neo-salvarsan can be made and injected intravenously, but personally I do not care to inject solutions of the strength of about 0·1 gm. neo-salvarsan in 1 c.c. saline with young children or babies.

The technique is of course simpler, but the danger of unfavourable complications is in my opinion greatly increased.

The pain of intramuscular injection is much diminished by first injecting a few c.c. of a $\frac{1}{2}$ per cent. novocaine solution, leaving the cannula in position, and after a few minutes injecting the neo-salvarsan through the same cannula.

With regard to the actual dose of neo-salvarsan administered, it must be remembered that its arsenic content is less than that of salvarsan, and therefore a larger quantity must be given. The simplest method of calculating the dose of neo-salvarsan is to take 0·15 gm. per kgrm. of body-weight, and this will mean that very young babies require a dose of 3 to 4 cgrm. given intravenously. The actual injection of the fluid into a baby's vein is not difficult, provided a small-bore needle is employed. The solution contains no solid particles, so the finest needle cannot get blocked. The amount to be injected is less than 10 c.c., and if the median basilic or external jugular vein be exposed, the needle can be inserted and the fluid injected without difficulty. With regard to the external jugular vein, the needle can in some cases be inserted and the injection made without any anæsthetic. The child is tightly rolled in a blanket, and the head placed on a hard cushion and immobilised by an assistant. The jugular veins are often unusually prominent in rachitic and heredo-syphilitic children, and the child's cries also tend to render the vein more prominent. When the external jugular vein is badly marked, it may be possible to utilise the temporal vein. The head is in this case also held absolutely steady, and the needle inserted directly into the vein while the vein is made prominent by the infant's cries, but the patient's skull is not such a satisfactory support for the operator's hand, and there is a risk of the needle slipping out of the vein. If a concentrated solution of the drug is being used, such an

accident leads to somewhat unpleasant inflammatory reaction round the point of injection and possibly phlebitis. These veins are certainly wanting in elasticity, and a hæmatoma sometimes follows the withdrawal of the needle unless a pad is immediately applied. When inserting the needle, there is always the possibility that it may not enter the vein at the first attempt, or may pass right through the vein. This is easily detected by having two syringes which fit the same needle, filling one with sterile saline solution and the other with the required dose of neo-salvarsan. The needle is attached to the syringe containing saline solution, inserted into the lumen of the vein, and some saline solution injected. If the needle is proved to be in proper position and the fluid passes readily in, the needle is left in place, and the syringe containing neo-salvarsan attached to it and the drug injected. If the salt solution does not freely enter the vein, the needle must be withdrawn slightly and moved about until it is right inside the lumen of the vein. In babies I have tried injecting the fluid intravenously by gravity from a glass vessel hung from the ceiling, but the needle and the vein both have so small a bore that the process is very tedious, and there is great danger of clotting.

In cases where several injections, or a series of injections, must be given, the advantage of administering the drug without an anæsthetic and without dissecting out the vein and leaving a scar is obvious, but the absolute immobilisation of the patient is one of the great difficulties, and two or three capable assistants are always necessary if the result is to be successful.

In every case it is wise to start with a small dose, even if this be raised considerably in subsequent injections. Such small initial injections are rarely followed by any considerable rise of temperature, and it is probable that any rise of temperature following the second or subsequent injections is due to the injection fluid not being perfectly sterile. Sometimes a leucocytosis follows the injection; occasionally urobilin appears in the urine. I consider it unwise to inject neo-salvarsan into patients who have marked cerebral involvement, and I am strongly of opinion that it should not be used in patients who have kidney disease or albuminuria.

At the April meeting of the Children's Section of the Royal Society of Medicine, I showed some cases of heredo-syphilis treated by intravenous injection of salvarsan and neo-salvarsan, of which the following case has some points of interest. The patient was a baby, who was admitted to the Queen's Hospital for Children when aged 11 weeks. When a little over a month old he commenced to show

typical symptoms of hereditary syphilis, and when taken into hospital he was almost covered with a maculo-papular eruption; there was a profuse muco-purulent discharge from the nostrils, there were numerous offensively smelling condylomata round the anus and on the buttocks, the child was wasted and looked emaciated. In addition to the skin-lesions, there was swelling and tenderness of the right wrist, but of no other joint or bone. The condition was apparently that known as syphilitic epiphysitis, but a skiagram showed that the shaft of the radius was considerably diseased, there being well-marked cancellation and rarefaction of the diaphysis, and in addition there was a considerable amount of periostitis spreading up the shaft of the radius and also of the ulna.

The Wassermann reaction was strongly positive. The child was admitted to hospital on April the 11th, and at 2 p.m. on April the 12th a dose of 0.06 gm. neo-salvarsan was injected into the left external jugular vein. At 10 p.m. on the same day the temperature rose to 103° F., but fell again next day almost to normal. The pulse rose from 120 to 136 at night.

The injection of neo-salvarsan was repeated on April the 18th into the right external jugular, but this caused the temperature to rise only above 99°. The dose was calculated in each case at 0.15 gm. per kilo of body-weight. The mother came to the hospital three times a day to suckle the child, and, in addition, five feeds a day were given of milk, water and lactose, an ounce and a half of the former and half a drachm of lactose. Within a week after the second injection all the skin symptoms had subsided, the snuffles had disappeared, and the tenderness of the wrist had vanished and the swelling was less.

Inasmuch as the general condition had so greatly improved, the skin lesions had healed up, and the child's life was no longer in imminent danger, it did not seem to me necessary to continue the use of a drug whose chief characteristic was rapidity of action. The wrist condition was not a troublesome one, and hardly caused any inconvenience, so I put the child upon a course of mercury, the action of which may be slow, but is sure, and under its influence the epiphysitis has markedly diminished.

We have not as yet records of a sufficient number of cases of syphilis, chiefly virulent syphilis, in which it has been necessary to give six, seven or eight injections of neo-salvarsan, on which to base conclusions, but there is no reason to think that the drug produces any anaphylaxis, or that moderate doses may not be repeated seven or eight times when the syphilitic lesions prove resistant. It

has yet to be determined how far the first or second dose causes any immunity to the action of the drug. In babies, however, it is rare to need more than two or three injections of neo-salvarsan, and, after the first or second intravenous injection, I am rather in favour—if more is needed—of an intramuscular injection, since the arsenic is then so much more slowly eliminated, the additional store can be gradually drawn upon over a considerable period, and its beneficial effects gradually produced.

The Wassermann reaction is but of little use as a guide to the treatment of hereditary syphilis. In almost all cases of hereditary syphilis with active symptoms it is positive, and usually remains positive in spite of treatment while such active symptoms are present. In a large percentage of cases of late hereditary syphilis it is also positive. This test conclusively shows that the truth of Colles's law—that a syphilitic child procreated by a syphilitic father never infects the mother—depends on the fact that the mother is already infected. This infection is in most cases the so-called conceptional syphilis.

In conclusion, as to the important question, under what circumstances salvarsan or neo-salvarsan should be employed in the treatment of hereditary syphilis, my view is that the drug should be used in those cases where rapidity of action is of prime importance. When the child is so ill that there seems little chance of it surviving, when mercury has already been tried and the child seems to be still sinking, or when mercury has proved inefficient after continued use, then I have no hesitation in injecting neo-salvarsan. That some cases of syphilis prove absolutely resistant to mercury we, of course, all know, and it is quite wonderful to see how often these cases clear up under treatment with neo-salvarsan. Without for a moment wishing to claim that the drug is an infallible cure for hereditary syphilis, I will only say that for rapidity of action and power of healing up syphilitic symptoms nothing superior has up to the present been discovered.

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A CASE OF MESENTERIC THROMBOSIS IN YOUTH ORIGINATING FROM A CASEATING TUBER- CULOUS GLAND.,

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MESENTERIC thrombosis in youth is a very rare condition, and the following instance appears worthy of record.

History of Illness.—On the afternoon of September the 22nd, 1913, I was called by Dr. A. C. E. Harris, of Birkenhead, to see a girl, aged $14\frac{1}{2}$ years, who had been seized that morning with acute abdominal pain. She had been perfectly well the night before, and her bowels had moved normally earlier in the day. The pain, which began about 11 a.m., was sudden in onset and severe and griping in character; she perspired freely, but did not vomit, and for the time being, looked acutely ill. Her temperature was normal and her pulse 140. The abdomen appeared generally tender, but not markedly so, and there was no distension. Early in the afternoon, however, the pain greatly improved and the patient appeared relatively comfortable. There now became evident a rather indefinite swelling above the pubes.

As the breasts had been developing for a few months the possibility that the symptoms were due to some retention of the menses with leakage decided Dr. Harris and his partner, Dr. Pollard, to call me in consultation.

There was a history of occasional attacks of pain in the abdomen—not particularly in the lower abdomen—for the last few years. These attacks had usually been accompanied by vomiting and the last of them had occurred two months previously. Tuberculous glands had been removed from the neck a few years earlier and her family history was markedly tuberculous.

Examination.—The girl appeared slight in build and rather fragile. Beyond the breast development there were no other signs of puberty. Her face was pale, but not anxious—certainly not a peritoneal face. She expressed herself as being now free from pain, but obviously

dreaded a return of the agony of that forenoon. Her temperature was normal, the pulse 90 and of good volume. The abdomen was flat and showed a very slight general tenderness without any rigidity, there was no thickening over the vermiform appendix, and no cutaneous hyperæsthesia. Deep pressure above the pubes showed a rounded swelling rising about one inch above the symphysis. It was central in position, slightly movable, soft in character, no more tender than the abdomen as a whole, and might well have represented a distended uterus. There was no fluid in the abdomen and no sign whatsoever of any obstruction. A rectal examination gave no indication of intussusception and showed the vagina to be empty. The lower end of the swelling was distinctly felt; it was practically non-tender, gave the impression of being cystic with a solid base, and could not be definitely separated from the cervix. No evidence of any tubal swelling could be made out laterally.

The diagnosis, then, was doubtful, but in spite of her age, hæmatometra seemed the most likely.

As the girl appeared so absolutely relieved we decided to postpone operation till next day. Unfortunately the severe pain suddenly recurred at 4 o'clock in the morning and by 6 a.m. she was in a state of collapse; there had been continuous vomiting and diarrhœa since the recurrence of the pain.

She was carried as soon as possible to a Nursing Home and was there etherised about 7 a.m. It was perfectly obvious from her condition that any operative procedure would have to be very rapidly performed, her pulse being practically uncountable.

There was now obvious distension of the abdomen with ladder patterns, and even under the anæsthetic, the swelling over the pubes was almost obscured; free fluid was now obvious.

Operation.—A mesial sub-umbilical incision was made and at once there escaped a large quantity of blood-stained fluid with a faintly fœcal odour. Several knuckles of small bowel, extremely distended, purple and shining, protruded. On exploration there was found a swelling the size of a pigeon's egg immediately above the pelvic brim which, on closer investigation, proved to be a caseating tuberculous gland. This was very adherent and situated at the base of the mesentery, which here had the same purple colour as the bowel. Attached to the gland was a band of omentum. When this had been released it was possible to pull the bowel out and to reach a spot where the distended and ecchymosed bowel suddenly changed both in calibre and appearance to the normal; this spot was about two feet from the ileo-cæcal junction. An attempt was made to find

the upper limit, but the patient's condition had become so alarming that it was found necessary to insert a drainage tube and immediately close the abdomen. The pulse improved for an hour or two, but the girl died six hours later.

Post-mortem.—A post-mortem examination was performed that evening about 7 p.m. The peritoneal fluid was already very foul. About ten feet of small intestine were hugely distended and well on the way to gangrene; the peritoneal coat had not, however, altogether lost its lustre. Commencing in the region of the abdominal gland, which itself was soft and caseating with several hard plates of calcareous material towards its posterior side, there was a well-marked thrombosis of a group of the intestinal branches of the inferior mesenteric vessels; both arteries and veins were implicated. This thrombosis spread as a fan-shaped area throughout the mesentery and finally was coterminous with the affected segment of intestine. The limits of this area of bowel were absolutely definite and both above and below the appearance was normal. No other tuberculous glands were discovered in the abdomen. The pelvic organs were normal.

Comments.—The condition at the onset of symptoms appears to have been one of shock alone, and it is remarkable that six hours later there should have been so notable an improvement. The "reaction," indeed, appears to have been very complete. With no pain, a normal temperature, a pulse of 90, and no evidence of obstruction or peritonitis, in spite of the history given by Dr. Harris and his partner Dr. Pollard that the girl was acutely ill when seen six hours earlier, one found no indication either for immediate operation, or of the extremely grave condition demonstrated later. With the suspicion that there was menstrual retention and a possibility of a leakage into the peritoneum one was particularly careful in examining the abdomen for free fluid, but none could be demonstrated. There can be no doubt that the solitary tuberculous gland was the focus of the trouble and its cause. The ladder patterns so well seen on the morning of the operation were probably caused by the taut omentum which was certainly compressing the bowel at the lower end of the distended area where there was a sudden diminution to the normal calibre.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, March the 27th, 1914.

The President, Dr. LEONARD GUTHRIE, in the Chair.

Ocular Torticollis.—Dr. E. A. COCKAYNE.—The patient, a boy aged 6½ years, held his head to the left. Facial asymmetry was well-marked. There was a compensatory spinal curvature of the cervico-dorsal region with convexity to the right. In the position naturally assumed no squint was visible, but on straightening his head the right eye deviated upwards (strabismus deorsum vergens). There was no diplopia when the head was straightened. Ocular movements were good. No shortening or rigidity of the sternomastoid had occurred and the head could be tilted over to the right voluntarily with ease. The condition was first noticed when he was two months old.

Congenital Deficiency of Vertebræ and Ribs.—Dr. COCKAYNE.—The patient, a female aged 9 months, showed a well-marked dorsal scoliosis with convexity to the left. There was a depression in the right upper dorsal region and also a prominence in the lower dorsal and upper lumbar region on the same side. The first, second, eleventh, and twelfth dorsal vertebræ with their ribs appeared to be normal. The third to the tenth vertebræ had a well-developed left half, but the right halves were separate from the left, were small and irregular in shape, and, in some instances, were fused together. The ribs were given off very irregularly on the affected side.

Hereditary Blue Sclerotics and Brittle Bones.—Dr. COCKAYNE showed a female child, aged 1 year and 10 months. The child had never walked and had dark blue sclerotics. The father also had blue sclerotics and broke both legs at the age of 16. The grandfather and an aunt also had blue sclerotics and at various times had fractured bones.

Hirschsprung's Disease.—Mr. C. MAX PAGE showed a case in a male child aged 2½ years. The condition was first noticed two years ago while an in-patient at St. Thomas's Hospital suffering from diphtheria. A laparotomy was performed and an enormously hypertrophied loop of pelvic colon was tapped and a colostomy established just proximal to the hypertrophied area. Improvement followed and the colostomy was closed, but subsequently had to be re-opened owing to the recurrence of symptoms. The colostomy again closed and the wound had now been sound for a year, the bowels acting with medicine. X-ray examination showed an enormous loop of colon still present.

Two Cases of Achondroplasia.—Mr. MAX PAGE.—Both were typical cases and were being treated with thyroid extract.

Spastic Diplegia.—Dr. R. A. CHISHOLM showed a case in a boy, one of twins, aged 11 years. He was born by foot presentation, but the labour was otherwise normal. There was marked spasticity of both arms and the

face was also somewhat affected. The legs were also somewhat spastic, but less than the arms, and he could walk well. There was a marked jaw jerk the deep reflexes were all very brisk, plantar reflex was extensor, and the bladder and rectum were normal. There was slight twitching, but no true athetosis and no inco-ordination. Wassermann test was negative.

Multiple Exostoses.—Mr. PHILIP TURNER.—The patient, a boy, aged 13 years, showed bony outgrowths near the extremities of most of the long bones. Of special interest were a very large exostosis attached to the outer surface of the ilium and a small tumour growing from the lamina of one of the dorsal vertebrae. The boy's father, a man, aged 35 years, also had multiple exostoses, among which was a very large one growing from the outer surface of the left ilium. In neither case did the tumours cause any disability.

Congenital Heart Disease.—Dr. F. G. CROOKSHANK.—The patient, a girl, aged 14 years, had dyspnoea on exertion and anginoid pains down the left arm. A long systolic murmur was heard over the præcordium and could be traced at the back of the chest to the left of the vertebral column. The symptoms, physical signs, radiogram, and electrocardiogram together appeared to indicate the patency of a persistent ductus, with some pulmonary stenosis and hypertrophy of the right ventricle.

Hodgkin's Disease.—Dr. J. T. LEON.—A boy, aged $10\frac{1}{2}$ years, had a mass of cervical glands considered to be tuberculous removed in 1912. He was now markedly anæmic, and had enlarged axillary and cervical glands. The spleen was palpable but the liver did not appear to be enlarged.

Subcutaneous Injury to the Median Nerve at the Elbow.—Mr. SIDNEY BOYD.—In August, 1913, the boy fell off a bicycle and fractured the lower end of the right humerus. In October the flexor muscles supplied by the median were paralysed, but there was no anæsthesia. The arm was put up on a splint with the affected muscles relaxed and regular massage instituted. Considerable improvement had resulted.

Congenital Torticollis.—Mr. CHAD WOODWARD.—A lump the size of a walnut was noticed in the left sterno-mastoid when the child was aged 5 weeks, two weeks later it was found that the head was beginning to deviate to the right. The birth was by a breech presentation.

Cirrhotic Liver with Perihepatitis.—Dr. J. W. CARR showed a specimen taken from a boy, aged $2\frac{1}{2}$ years, who was shown at a meeting of the Section in November, 1913, and died in January, 1914. The Wassermann reaction was negative on three occasions and there was no evidence of syphilis. The liver was large and tough and there was marked perihepatitis. Histologically the liver presented in the main the features of an early multilobular fibrosis.

Tuberculous Kidney.—Mr. SIDNEY BOYD, showed a specimen removed from a child aged 3 years, under spinal anæsthesia. It showed advanced tuberculous changes with extensive cavitation and infiltration of pelvis and ureter. The child made a good recovery from the operation.

Cirrhosis of the Liver.—Dr. S. WYARD and Dr. H. D. ROLLESTON showed a specimen taken from a girl, aged 6 years. There was no history of alcoholism. While in the hospital the liver and the spleen were enlarged and the Wassermann reaction was positive. Some temporary improvement occurred on antisiphilitic treatment. The liver weighed 20 oz. The right lobe was nodular but the surface of the left lobe was smooth. On section both lobes showed cirrhosis, which was especially advanced in the left lobe. The spleen weighed 16 oz.

CLINICAL SECTION.

Friday, March the 13th, 1914.

Traumatic Sensory Aphasia treated successfully by Trephining and Removal of Clot.—Mr. V. ZACHARY COPE.—A girl, aged 14 years, was admitted to hospital on August 14th, with the history that three hours previously she had fallen down a flight of steps and struck the back part and left side of her head. She had since been semi-conscious and had vomited frequently. On admission the temperature was normal, the pulse 76 and respirations 16. She lay with her eyes closed, but when approached, opened them, and said "Don't hurt me, Daddy," and repeated the word "Daddy" frequently during examination. She had no recollection of the accident and with difficulty recalled her actions prior to the injury. She continually relapsed into a more drowsy condition, and her eyeballs kept rolling upwards. There was an abrasion and a very small scalp wound behind the left ear. There were no signs of fracture of the base, and no paralysis.

At first her condition was regarded as one of simple concussion and cerebral irritation, but gradually her pulse became slower till it was 50, and though fully conscious she did not speak a word. Examination on August 19th, showed that she understood words spoken to her, but was unable to repeat them. She could not answer any question intelligibly, and the only word she could utter spontaneously was her sister's nickname "Doodles" which she repeated throughout the examination. She was able to write spontaneously, but her writing was not intelligible. She was unable to write from dictation, or to read aloud. Ophthalmoscopy showed congestion of the retinal vessels and blurring of the edges of her discs. An operation was performed on August 21st, when a horseshoe-shaped flap was made with its base above the left ear. No clot was found outside the dura, which was tense, bulging and non-pulsatile. When the dura was incised a small amount of dark blood was found underneath, but a considerable quantity of old clot was found in the region of the occipital lobe and escaped under considerable tension. No subcortical hæmorrhage was found. The pulse at the end of the operation was 100; at the beginning it had been 50.

Recovery of speech after the operation was exceedingly quick, and within a week was practically complete.

Philadelphia Pediatric Society.

April the 14th, 1914, WILLIAM N. BRADLEY, M.D., President.

Congenital Absence of both Hepatic Ducts.—Dr. OLIVER H. STANSFIELD, by invitation, reported the case of a white girl, aged 3 months, admitted to the Polyclinic Hospital, February the 1st, with a history of jaundice since birth. Stools had always been white, "putty-like," large and frequent. Urine had always been unusually dark. She had had no other illness. Family history was also negative. Examination showed an extremely jaundiced, drowsy infant, with purpuric spots on both forearms. Sclera were deep yellow. Liver reached almost to the iliac crest on the right, and to the umbilicus on the left; it was firm, smooth, and not pulsating. Spleen was also markedly enlarged. Temperature was subnormal and pulse slow. Urine examinations showed increased urobilin and biliary pigments, no sugar, albumin or casts. Stools contained occult blood, much fat but no hydrobilirubin. Levulose hepatic function tests showed great hepatic inefficiency. Autopsy showed biliary cirrhosis with absence of both hepatic ducts. The gall-bladder was empty and unstained, never having contained bile. The pancreatic and retroduodenal portions of the common duct were present. Spleen showed moderate passive congestion.

Dr. J. P. CROZER GRIFFITH said that the case was certainly a most interesting one and closely allied to congenital obliteration of the bile-ducts, of which he had been fortunate in seeing two instances. There were many grades of obstruction and a close association with congenital biliary cirrhosis. The method of production was uncertain and there was a decided division of opinion among writers as to the cause, some believing that the obliteration was primary, occurring as a malformation, the result, perhaps, of some inflammatory process developing during intra-uterine life. This might advance to such an extent that the lumen of the bile-duct was not only obliterated but that the entire duct had disappeared. This might be true in Dr. Stansfield's case. In such cases the cirrhosis of the liver, so often associated, is a secondary condition to the duct lesion, and would be more marked if the patient lived longer. One of Dr. Griffith's patients died at ten days. There was complete obliteration of portion of the common duct and the cirrhosis of the liver was trifling. The other view is that cirrhosis of the liver is primary, with a descending inflammatory change which finally involves the bile duct. In Dr. Griffith's second case, in which the cirrhosis was very marked, the child died at 5 months.

Umbilical Hernia.—Dr. HARRY LOWENBURG presented a new belt for the treatment of umbilical hernia in children.

Retroperitoneal Tumour.—Dr. F. R. JACOBS showed a girl, aged 4 years, with an abdominal tumour as large as a small cantaloupe in the left hypochondriac region, pushing forward against the abdominal wall. The tumour was firm, not tender or movable. Its duration was unknown. The child had vomited everything for some time. Since admission to the Howard Hospital, she had only vomited twice. There was no blood in the stools; urine was negative. Leucocytes were 12,800, with 74 per cent.

polymorphonuclears, 21 per cent. lymphocytes, 1 per cent. large mononuclears, and 4 per cent. transitionals. The X-ray was wholly negative. The probable diagnosis made was retroperitoneal sarcoma.

The Spleen in relation to Blood Destruction and Regeneration.—

Dr. R. M. PEARCE, by invitation, gave a lantern demonstration, with the following conclusions. Splenectomy in the dog is followed by anæmia of the secondary type, reaching its height after four to six weeks with return to normal after three to five months. It is followed by increased resistance of the red blood-cells; decreased tendency to jaundice when hæmolytic agents are injected; and a tendency, after six months, for the yellow marrow of the long bones to be transferred into red marrow.

Chronic Splenomegaly with Anæmia.—Dr. E. B. KRUMBHAAR read a classification and analysis of the different types of chronic splenomegaly with anæmia. Splenic anæmia was first established by Gretscl, forty-eight years ago, to denote anæmia with enlargement of the spleen without leucocytosis. It should now be restricted to the early stages of Banti's disease or discarded entirely. We now differentiate this from Gaucher's disease or large-celled splenomegaly; Banti's disease or splenic anæmia with hepatic cirrhosis; von Jaksch's *pseudoleukæmia infantum*, probably secondary to rickets; and the two types of hæmolytic jaundice with splenomegaly, Hayem-Widal or acquired type, and Chauffard-Minkowski or congenital or familial type. Dr. Krumbhaar analysed these types, interpreting each in the light of Dr. Pearce's experimental evidence. He also described the hæmatological tests used in diagnosis, resistance of the red corpuscles, percentage of reticulated cells, auto-agglutination test, etc. He also called attention to the cardinal features of acholuric jaundice, chlorotic anæmia, chronic splenomegaly, increased urobilin in the blood and urine, etc. A differentiation of the two types of hæmolytic jaundice, based on an analysis of 154 cases, showed that the anæmia was much more severe in the acquired types, Widal's "crises of deglobulisation" more frequent and the auto-agglutination test positive. Less confusion would result if the term "congenital" was discarded. Cases identical with the acquired type may follow acute infections but the signs of increased hæmolysis usually disappear when the underlying cause is removed. In very severe cases the picture may resemble that of pernicious anæmia. In treatment splenectomy has proved successful in both types of hæmolytic jaundice, whereas in pernicious anæmia only slight improvement has followed removal of the spleen.

Splenectomy as a Therapeutic Measure.—Dr. G. P. MÜLLER said that splenectomy had been practised for many years for relief of a variety of affections, but with the exception of injury and tumour of the spleen many of the operations have been done on rather vague physiological grounds, without sufficient foundation for their performance. Splenectomy is indicated in rupture of the spleen, displacement with torsion of the pedicle, certain cases of hypertrophy from malaria, in cysts and tumours. It is on trial in Banti's disease, splenomegaly with hæmolytic jaundice and pernicious anæmia, the indications not being clearly marked. In rupture of the spleen, there is no necessity to remove the organ if the tear is small and the hæmorrhage easily controlled. The history of a blow or fall affecting the splenic area, followed by rigidity of the abdominal muscles and signs of hæmorrhage should be enough for an exploratory incision. It is not neces-

sary to wait for dulness in the flanks. In typhoid fever many cases of rupture of the spleen have been reported and rough handling of the spleen in this disease is to be deprecated. When the normal spleen is excessively mobile, the patient will be found to be viscerotropic; the hypertrophied spleen may also descend from its normal position, but adhesions in the hypertrophy of the ligament usually hold the organ in place. Removal of the spleen gives better results in these cases than fixation, but operation should not be countenanced unless definite symptoms have appeared. When tumour or cyst of the spleen has been diagnosed, splenectomy should be performed, although resection of a cyst has been successfully done. Splenomegaly occurs in many conditions. An enlarged spleen in malaria is not an indication for operation. Splenectomy is only permissible when grave symptoms are caused by undue tension on the pedicle or when torsion is threatened. In Gaucher's disease it is probable that lymph nodes and bone-marrow are also involved; splenectomy is not indicated theoretically, though some cases have been reported in which improvement followed operation. In Banti's disease splenectomy has apparently proved curative if performed in the early stage, before cirrhosis of the liver has become marked. In certain cases of hæmolytic jaundice associated with splenomegaly, either of congenital or acquired type, splenectomy is indicated, mostly upon empirical grounds. In pernicious anæmia splenectomy has recently been advocated by Eppinger. It is necessary to distinguish disease of the liver, of the portal vein, and certain other affections from the so-called splenic anæmia before submitting the patient to operation. Finally, the evidence of the decreased resistance of the patient to infection after splenectomy is conflicting.

Dr. J. S. RODMAN said that he had been impressed by the papers. He had been much interested in a special phase of the subject, Banti's disease. Dr. Willard and he had reviewed the literature and concluded that Banti's name should be attached to the third stage of splenic anæmia. They tried to determine the relationship between thrombosis of the portal and splenic veins and splenomegaly. On account of the frequency of thrombosis of the portal and splenic veins at autopsy in cases of splenic anæmia, they attempted to produce in dogs obstruction of the splenic vein by ligation. Immediate enlargement of the spleen occurred, persisting about one month, gradually being replaced by atrophy. They also partially clamped the portal vein, again producing only temporary enlargement of the spleen. During the splenic enlargement, there was a leucocytosis which returned to normal three weeks after operation. They failed to produce splenic or portal thrombosis. They believed that thrombosis was more an accidental finding than of any great ætiological importance. They agreed with Pearce in attributing the anæmia to increased resistance, which in turn had been brought about by overaction of splenic cells. The operative mortality had been greatly reduced during the past decade. Up to 1900 Bessel Fagan found 36 per cent. died; in 1908 Johnson had a mortality of 18 per cent., including splenectomy for all conditions. From 1908 to 1912, 5 to 10 per cent. of cases in first and second stages died. In the third stage the mortality is much greater, about 56 per cent. A combination of splenectomy and Talma's operation has proved successful in the third stage.

Dr. W. W. BABCOCK referred to several cases illustrating splenic disease and injury. A boy, aged 8 years, who was entering the third stage of Banti's disease showed markedly increased susceptibility to infection after splenectomy. He had suffered from increasing gastric disturbances for three

years. The liver was atrophic and showed advanced cirrhotic change. After splenectomy the symptoms disappeared, but there was evident susceptibility to infection. Three years after splenectomy he caught what seemed to be a slight cold, which proved fatal.

Société de Pédiatrie, Paris.

March the 10th, 1914. (Bulletin No. 3.)

Cerebro-spinal Meningitis with Meningococcal Arthritis.—M. COMBY and Mlle. CONDAT showed a girl, aged 6 years, who developed, during the course of a cerebro-spinal meningitis, a purulent arthritis of the right knee. After puncture, which failed to draw off the thick pus by aspiration, 10 c.c. of anti-meningococcal serum were introduced into the joint. Complete recovery resulted without deformity.

Permanent Microsphygmia and Microcephaly.—MM. VARIOT and GRANDJEAN showed a boy, aged 9 years, with this condition. There was marked imbecility, but no ichthyosis.

The Dangers of Injections of Witte's Peptone in the Treatment of Hæmophilia.—MM. LEREBoullet and VAUCHER.—The first injections were well borne, but there was slight local reaction and rise of temperature with the first. The child seemed better for the treatment—the hæmorrhages ceased shortly after the commencement of the injections; but the twelfth was followed by intense local reaction and severe and fatal hæmorrhage.

Spasm of the Cardia with Œsophageal Dilatation.—M. GUISEZ showed a girl, aged 8 years, the subject of an intermittent spasm of the cardia, which subsequently became permanent. The cardia was completely obstructed by a muscular hypertrophy of unknown origin. Treatment consisted in dilatation by bougies.

M. GUISEZ also showed a collection of foreign bodies he had removed from the œsophagus and air-passages by means of bronchoscopy.

Wassermann's Reaction positive in the Infant and negative in the Mother.—M. CASSOUTE reported the case of an atrophic infant, without obvious signs of congenital syphilis, who gave a positive Wassermann reaction, while the mother's reaction was negative. M. Dufour discussed the case with reference to Colles' law.

Gangrene of the Foot in Diphtheria.—MM. VEAU and WEBER showed a girl, aged $5\frac{1}{2}$ years, whose foot had been amputated for gangrene occurring on the nineteenth day of a severe attack of diphtheria, and due to arterial thrombosis.

Puncture of the Pericardium in Pericardial Effusion.—MM. GUINON and MALARTE related the case of a boy, aged 13 years, the subject of purulent pleurisy, who had a severe attack of dyspnœa and cyanosis.

Radiography showed complete obscurity over the whole pericardial region. Puncture was made with negative result. A second puncture the following day entered the right ventricle and drew off some dark-coloured blood. The child recovered satisfactorily. In a second case of a boy, aged 2 years, suffering from purulent pericarditis and broncho-pneumonia, radiography gave a shadow over the whole pericardial region. A first puncture entered the right ventricle; the second, with a thicker needle, drew off a thick greenish liquid containing pneumococci. The speakers drew attention to the uncertainty of interpretation of radiographs of the heart and pericardium and the harmlessness of puncturing the ventricle.

M. VARIOT said that to penetrate the myocardium when the needle had passed through a septic fluid in the pericardium was to run the risk of infecting the heart-tissue and producing foci of myocarditis.

Loss of Substance of the Left Parietal Region with Right Hemiplegia and Mental Debility.—M. VARIOT and Mme. CHATELAIN reported the case of a girl, aged 6½ years, who had a gap in the left parietal bone, either due to a fracture during birth or in early infancy, or to syphilitic lesions affecting the cortex, meninges and cranium, or to congenital cerebral malformation with concomitant cranial malformation.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Diphtheria at the Hôpital Hérold (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, 1914, xxxvii, p. 54).—H. Barbier and Aine.—During the years 1911–12, 431 diphtheria cases were admitted to this Paris hospital. The mortality was 12 per cent. On eliminating those cases which died within twenty-four hours of admission, as well as those in which death was independent of diphtheria, the mortality was reduced to 7 per cent.—a slight increase over that in 1904–7, when the reduced mortality was 5·7 per cent. (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1908, vi, p. 233). Delay in administration of antitoxin, due in great part to “serumphobia” on the part of the private practitioners, was responsible for many deaths. Other deaths were due to secondary infections, such as broncho-pneumonia or eruptive fevers.

J. D. ROLLESTON.

Is diphtheria frequently a bacteriæmia? (*Amer. Journ. Dis. Child.*, 1913, vi, p. 23).—M. Nicoll, jun., and Harriett L. Wilcox allude to the frequency with which Conradi and Bierast. (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, ix, p. 508) and others found diphtheria bacilli in the urine, and record their own observations on fifty-four patients with fifty-six examinations of the urine. Twenty-five were routine cases, twenty-one were severe cases and eight were recent convalescents. Positive results were found in only two cases, belonging to the second group, and may possibly have been due to accidental contamination. The writers conclude that diphtheria bacilli may occasionally gain access to the blood and be excreted in the urine in very severe cases of diphtheria, but maintain that

identification of diphtheria bacilli in the urine should not rest on morphological characteristics alone, but be confirmed by animal inoculation controlled by the use of antitoxin.

J. D. ROLLESTON.

Diphtheria bacilli in the organs in fatal diphtheria ('*Deut. med. Woch.*,' 1914, XL, p. 594).—Liedtke and Völckel examined the organs in seven cases who died in the acute stage and in all found numerous typical diphtheria bacilli in the heart, lungs, liver, spleen, kidneys and bone marrow. In two cases portions of the brain were examined with a positive result. In every case the cultures from each organ were tested on guinea-pigs, and every strain was found virulent (cf. BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 365). The writers also examined the urine of thirty diphtheria patients and in six found organisms which morphologically and culturally resembled diphtheria bacilli. In two cases these were virulent to guinea-pigs (cf. BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, IX, p. 508).

J. D. ROLLESTON.

The diphtheria antitoxin=content of human blood-serum ('*Jahrb. f. Kinderheilk.*,' 1913, LXXVIII, p. 442).—H. Kleinschmidt, using Römer's intracutaneous method, obtained the following results: (1) Out of eighteen infants, aged from 2 to 17 months, suffering from various diseases, but not diphtheria, in sixteen the blood was found free of diphtheria antitoxin. (2) The amount of antitoxin in the blood occasionally found in older infants who are not diphtheria carriers, is small (0.1 to 0.15 units per c.c. of serum). (3) On the other hand, the blood of sixteen infant diphtheria bacillus carriers, aged from 3 to 15 months, showed considerably higher amounts of antitoxin (0.5 to 2.5 units per c.c. of serum). (4) In certain carriers, on repeated examination, an increase in the antitoxin in the blood was observed during the clinically latent diphtheria infection. (5) Infants, although diphtheria bacillus carriers, may remain free from diphtheria, although without antitoxin in the blood, presumably on account of local protection afforded by the mucous membrane.

J. D. ROLLESTON.

Cardiac thrombosis in diphtheria ('*Rev. médicale de la Suisse rom.*,' 1912, XXXII, p. 60).—A. D'Espine and H. Mallet.—A boy, aged 6 years, had attacks of syncope and cyanosis on the eleventh day of diphtheria and died on the thirteenth. The necropsy showed a large number of parietal thrombi in both auricles and ventricles and a thrombus the size of a pigeon's egg on the mitral orifice and upper part of the left ventricle. Microscopically there was parenchymatous myocarditis. There were multiple emboli in the pulmonary arteries, but no infarcts. There were two small infarcts in the left kidney.

J. D. ROLLESTON.

Obliteration of the arteries of the limbs in diphtheria ('*Thèses de Paris*,' 1913-14, No. 100).—L. A. Bailly has collected eighteen cases from literature including that reported by the abstractor (BRITISH JOURNAL OF CHILDREN'S DISEASES, 1910, VII, p. 529) and the following original one: A girl, aged 5½ years, after a severe attack of diphtheria, complicated by early paralysis of the palate and cardiac dilatation, developed signs of arterial obliteration in both lower limbs on the nineteenth day of disease. The condition cleared up in five days on the left side, but became more marked on the right, and a week after the onset all the toes and the superficial tissues of the anterior part of the right foot had become gangrenous.

After generalised paralysis recovery took place and the child was discharged after 58 days' stay in hospital, amputation of the gangrenous area being recommended. Bailly attributes the condition to embolism following cardiac thrombosis. The embolus was probably first arrested at the bifurcation of the aorta, as for twenty-four hours abdominal pain coincided with the disappearance of the femoral pulse, but later it became definitely fixed in the popliteal artery.

J. D. ROLLESTON.

Diphtheritic vaginitis (*Am. Journ. Obst.*, 1914, LXIX, p. 272).—**A. L. Goodman**.—A patient, whose age is not given, suffering from empyema following pneumonia, developed faucial diphtheria and shortly afterwards a foul vaginal discharge. The vulva and vagina were covered with dark greyish membrane, a culture from which showed diphtheria bacilli. After repeated injections of antitoxin a membrane, 8 cm. long, was brought away by the vaginal douche, leaving a red, raw surface, which bled moderately for a few days. Death occurred later from pulmonary oedema. Most of the recorded cases seem to have occurred in puerperal women, but eight of the cases reviewed by the writer were in children aged from 5 months to 15 years.

J. D. ROLLESTON.

Diphtheria due to piercing of the ear-lobules (*Wien. klin. Wochenschr.*, 1913, xxvi, p. 1306).—**R. Pollak**.—A female infant, aged 19 days, had the ear-lobules pierced by the district midwife on October 4. On October 10 purulent crusts appeared at the punctures, and on the 12th a pustule on the upper lip. Subsequently more pustules appeared on the lips, gums, and tongue. The throat was not affected. The temperature gradually rose to 104° F., and death took place on November 3. Necropsy: The left lobule showed a round hole 2 mm. in diameter, surrounded by discoloured and softened tissue. The discoloration extended anteriorly up to the external meatus and posteriorly over the back of the pinna to the mastoid, where the skin was red, the epidermis peeling off, and the subcutaneous tissue and muscles oedematous. The right lobule showed a hole $\frac{3}{4}$ cm. in diameter, the edges of which were partly clean and partly covered with granulations. The surrounding tissue was swollen and reddened, and the epidermis was peeling off. The lesions extended to the back of the pinna, but the external meatus and mastoid region were free. There were lobular pneumonia of the right lower lobe, degeneration of the heart muscle, liver and kidneys, and numerous hæmorrhages in the superficial and deep parts of the lungs. Cultures of the lungs showed virulent diphtheria bacilli (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 178). The spleen pulp was sterile. No bacteriological examination was made of the ears owing to the advanced destruction of the tissues.

J. D. ROLLESTON.

683 cases of the serum disease (*Jahrb. f. Kinderheilk.*, 1913, LXXVIII, p. 565).—**L. Axenow**. The cases occurred among scarlet fever patients treated with Moser's serum in the Municipal Children's Hospital in St. Petersburg. The serum disease occurred more frequently in children under five years (74·5 per cent.) than above that age (59 per cent.). This may have been due to the relatively larger doses given to the younger children. Sex had no influence. The incubation period varied from three to seventeen days; in the majority of cases it was from seven to ten days. The disease lasted from one to thirty-two days, two maxima being noted, one of five

days and the other of two weeks. Urticaria occurred in 34 per cent., erythema of various kinds in 63·5 per cent., joint affections in 23 per cent., oedema in 12 per cent., and albuminuria in 9·5 per cent. In twenty-one cases death was due to the serum disease alone. In another thirty-seven fatal cases scarlatinal complications were also present, but they ran a mild course until the appearance of the serum phenomena, when they rapidly led to a fatal issue. Further, in eleven cases death was due not to the serum disease but to the serum itself. In four of these hæmolysis was noted, which was due to the condition of the serum, and in seven gangrene occurred owing to faulty technique. Treatment: Netter's and Besredka's prophylactic methods proved unsuccessful. Urticaria was best treated by sponging thrice daily with $\frac{1}{2}$ per cent. carbolic solution or by a dessertspoonful of 2 per cent. sodium bromide at night. Arthralgia was relieved by alcohol compresses, local hot baths, and occasionally by salicyl preparations.

J. D. ROLLESTON.

Anomalous scarlatina eruption ('*Arch. f. Kinderheilk.*,' 1913, LXII, p. 79).—**J. A. Schabad** reports 3 cases of scarlet fever in children, aged 10, 3, and 7 years respectively, in whom the eruption was manifested merely by a swelling of the skin follicles, resembling "goose skin," without any reddening of the skin. In the first case no desquamation was noticed, in the second the desquamation was general and well-marked, and in the third it was slight.

J. D. ROLLESTON.

Scarlet fever in the aged ('*Edinburgh Med. Journ.*,' 1913, XI, p. 492).—**C. B. Ker** records a case in a man, aged 74 years, complicated by otitis and arthritis. Desquamation was typical. Recovery took place. In a total of 263,986 cases treated in modern fever hospitals, Ker could find only twenty in persons above 60, and of these only two were definitely stated to be 70 years and upwards.

J. D. ROLLESTON.

Second attacks of scarlet fever ('*Arch. de Méd. des Enf.*,' 1914, XVII, p. 267).—**G. Jacobson**.—Four children of the same family, aged 7, 8, 9 and 10 years respectively, had a second attack of scarlet fever. In every case the second attack was worse than the first, which in one had occurred four years and in the other three one year previously. The child, aged 8 years, died and the rest had various complications.

J. D. ROLLESTON.

Bradycardia in scarlet fever ('*Bull. et mém. Soc. méd. des Hôp. de Paris*,' 1914, xxxvii, p. 614).—**Monier-Vinard** and **Meaux-Saint-Marc** examined the cardiac rhythm of 270 scarlet fever patients and found bradycardia in 165. It was present only in the moderate and mild cases, tachycardia being invariable in the severe. It was observed during the decline of the eruption, rarely at the time of its appearance. Of the 165 cases 136 were adolescents or adults and 29 children under twelve years. Bradycardia was much less common in children, in whom it occurred in 31·5 per cent., than in adults, in which its frequency was 76·4 per cent. In children tachycardia was the rule during the febrile period, bradycardia occurring only after the fall of the temperature. The average bradycardia pulse-rate was 64 in the child and 56 in the adult. In only 4 children did the pulse-rate sink to 58 or 56. The duration of bradycardia was also less in the child than in the adult. The bradycardia of scarlet fever, like that of mumps (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 282) and other acute infec-

tions, is a nervous bradycardia, and indicates an exaggeration of the inhibitory action of the vagus. It is transitory, unstable, and irregular and liable to be modified by a number of influences. It is a good prognostic, in striking contrast with the tachycardia due to paralysis of the vagus which occurs in severe and malignant scarlet fever.

J. D. ROLLESTON.

Functional test (phenol-sulphonephthalein) of the kidney in scarlet fever (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1368).—**M. Fish-bein** reports some cases of scarlet fever in which the renal function was tested by intramuscular injection of phenol-sulphonephthalein. In normal persons 65 to 85 per cent. of the dye is excreted after two hours. In acute nephritis the activity of the kidneys may fluctuate greatly in twenty-four to forty-eight hours. In parenchymatous nephritis there is a marked decrease in the amount of the drug excreted, and in chronic interstitial nephritis a low output is found in all cases. The writer found that in scarlet fever there seems to be a general lowering of the renal function during the later stages of the disease, as in nearly all uncomplicated cases examined from the third to the fifth week the total output only averaged 55 per cent. In the instances of acute nephritis an increased output was observed in two, and a lowered in one. In several instances in which headache and nausea occurred, although no albumin was found in the urine, the test showed a decreased function of the kidneys. The practical value of the test as an aid to treatment in this disease is apparent.

T. R. WHIPHAM.

Familial disposition for scarlatinal nephritis (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 438).—**R. Bode**, in a study of 3,500 scarlet fever patients, found that 190 cases of nephritis occurred among several members of 89 families, while 114 isolated cases of nephritis occurred among 271 families. He therefore agrees with Mathies (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1914, XI, p. 36), in a belief in a familial disposition to nephritis in scarlet fever; but, unlike Tuch, he does not regard the kidneys in such cases as a *locus minoris resistentiæ*, nor like Spieler maintain an hereditary renal debility. He merely thinks that blood relations react in a similar manner to the same infective or toxic agent.

J. D. ROLLESTON.

Chronic Scarlatinal nephritis (*Thèses de Paris*, 1913-14, No. 192).—**R. Gerschenovitsch**.—Scarlatinal nephritis may terminate by death, complete recovery, or by passage into a chronic stage. The latter may occur in one of three ways. (1) The symptoms become attenuated, but do not disappear. (2) All the symptoms disappear except albuminuria, which persists with or without casts. (3) Recovery is apparent rather than real, for after a certain time the process, hitherto quiescent, becomes active and evolves like Bright's disease. Of thirty-seven cases collected by the writer, eight belong to the first group, eighteen to the second, and eleven to the third. In other words, one-half the cases run their course without retention phenomena with simple albuminuria, while the other half are accompanied by symptoms of azotæmia or chloruria. Fifteen of the thirty-seven cases dated from attacks of scarlet fever between the ages of 3 and 15 years. The thesis ends with the dictum of Talamon and Lecorché: "Scarlatina is to the kidney what acute articular rheumatism is to the heart."

J. D. ROLLESTON.

The influence of scarlet fever on Wassermann's reaction (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 215).—**B. Jacobovics** made 178 examina-

tions of the serum of 55 patients in the Budapesth Children's Hospital, and in 37 specimens obtained from 18 patients got positive results. In 16 patients the positive reaction was first obtained after subsidence of the acute symptoms, *i. e.* from the twentieth to the twenty-third day of disease—a result similar to that obtained by Much and Eichelberg, Halberstædter, and Much and Reiche. Syphilis, congenital or acquired, could be excluded, because, apart from a negative history and absence of clinical signs, the reaction was always negative both before and after the positive phase. The earliest date at which the reaction becomes negative was the thirty-fifth day of disease, and the latest the forty-eighth. In 83 per cent. there was more or less extensive necrosis in the throat.

J. D. ROLLESTON.

Osteitis of the frontal bone in scarlet fever (*'Thèses de Paris,'* 1913-14, No. 125).—A. Gilles.—A boy aged 10 years developed osteitis of the frontal bone on the twenty-fifth day of scarlet fever. The temperature, which had been normal for nearly a week, rose again, but rapidly subsided when the abscess was opened. Examination of the pus showed streptococci. A fistula leading down to the frontal bone was still present nearly three months after the operation. The thesis contains the histories of other bone and joint complications of scarlet fever recorded in recent literature.

J. D. ROLLESTON.

The diagnostic significance of Döhle's inclusion bodies in scarlet fever, measles, diphtheria, tonsillitis and serum rashes (*'Arch. f. Kinderheilk.,'* 1914, LXII, p. 321).—S. N. Rosanoff examined the blood of 325 scarlet fever patients, and 321 controls *viz.* 156 cases of measles, 144 of diphtheria, 17 of tonsillitis, 14 of serum rashes, and 20 healthy persons. His conclusions were as follows: (1) Scarlet fever cannot be diagnosed on the strength of a single blood smear containing inclusion bodies, since similar bodies are found in measles, diphtheria and some forms of tonsillitis. (2) As the inclusion bodies are always present during the first few days of the disease, their absence during this period is strong evidence against scarlet fever, except in cases of scarlatina fulminans. (3) Their value in the early diagnosis of scarlet fever is diminished by the fact that they are found with difficulty during the first few hours of the disease, especially in mild cases. (4) A strong reaction indicates a severe attack. (5) The presence of inclusion bodies in measles and diphtheria patients suspected to have contracted scarlet fever does not settle the diagnosis during the first five days of the disease, but if the bodies are present later they confirm the existence of scarlet fever. (6) Their presence in tonsillitis, except cases of quinsy, should suggest scarlet fever. (7) The finding of inclusion bodies allows one to distinguish scarlet fever from scarlatiniform eruptions provided that the latter have appeared five days after the onset of the original disease, *i. e.*, diphtheria.

J. D. ROLLESTON.

Measles in a new-born child (*'Deutsch. med. Woch.,'* 1914, LX, p. 441).—E. Steinschneider during an epidemic of measles saw a child aged 9 days, with conjunctivitis, photophobia, Koplik's spots and a typical measles eruption. Temperature 102·4. Recovery took place.

J. D. ROLLESTON.

Mortality in measles, especially in early childhood (*'Le Nourrisson,'* 1914, II, p. 25).—S. Chauvet.—From May 13 to June 12, 120 measles cases were admitted to Marfan's measles block at the Hôpital des Enfants malades.

Forty-six died, a mortality of 37·5 per cent. Of these 16 were in the first year of life, 23 in the second, 2 in the third, 2 in the fourth, 1 in the fifth, and 1 in the tenth year. Three deaths were due to severe diarrhoea on the seventh, thirteenth, and sixteenth day of the eruption, 1 was due to inflammation of the arm, 1 to diphtheria, and 41 to broncho-pneumonia. One of the cases was in the incubation stage of scarlet fever on admission, and 23 children were subsequently infected. Two-thirds of the children developed otitis, usually in both ears. Of cases admitted in error to the block and discharged after one or two days' stay, 15 subsequently developed measles, and 2 died of broncho-pneumonia. The high rate of mortality and complications is attributed to overcrowding and the absence of individual isolation which has given such good results at the Pasteur, Saint Joseph, and Hérold hospitals. J. D. ROLLESTON.

Interstitial and subcutaneous emphysema in measles (*Zentralbl. f. Kinderheilk.*, 1913, xvii, p. 487).—T. Piske records three cases in children aged 1, 5 and 6 years, who, at the height of the measles eruption, suddenly developed dyspnoea, restlessness and subcutaneous emphysema. The dyspnoea was not accounted for by the signs in the lungs, and no remarkably severe attacks of coughing had been noticed. In the child, aged 5 years, who died, the presence of deposit on the tonsils, in addition to dyspnoea, at first suggested diphtheria. The necropsy showed purulent bronchitis, broncho-pneumonic areas in both lungs, and interstitial emphysema. As regards treatment, the coughing should be checked by pantopon or codeine, and by injections of morphine (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1910, vii, p. 411). J. D. ROLLESTON.

Gangrene in the lower limbs following acute arteritis in measles (*Arch. de Méd. des Enf.*, 1914, xvii, p. 42).—Galop records a case which occurred in a female infant, aged 19 months, shortly after the onset of measles complicated by broncho-pneumonia. Dry gangrene involved the whole of the right foot and part of the leg. No pulsation was felt in the popliteal artery. There was also paresis of the right upper limb which was attributed to embolism as the heart was enlarged and presented a loud murmur. Amputation was performed, but the stump became gangrenous and the child was removed from hospital moribund. J. D. ROLLESTON.

Koplik's spots occurring on the tonsils of a child anaphylactic to egg-albumen (*Johns Hopkins Hosp. Bull.*, 1914, xxv, p. 78).—S. R. Miller.—A girl, aged 10 months, shortly after taking egg-white for the first time, became restless, fretful, and dyspnoeic, with a temperature of 103·5° F. The throat showed no membrane, but on each tonsil there were about twenty-five bluish-white bodies exactly like Koplik's spots. Relief of symptoms followed a hot bath, and the rash of measles began to appear. The child's sister had had measles a fortnight previously. Some time later the child showed further signs of anaphylaxis to egg-albumen. About half an hour after taking egg-white and orange juice she had laryngeal distress, a temperature of 103°, and a general urticaria. Von Pirquet's test with egg-albumen was subsequently performed, and produced a marked local reaction with mild constitutional disturbance. J. D. ROLLESTON.

Otitis and smallpox (*Giorn. internaz. d. Sci. Med.*, 1914, xxxvi, p. 269).—C. Verso.—Otitis in smallpox is so rare that it may be regarded as a coincidence. Of 2147 cases admitted to the Cotugno hospital in Naples from

1908 to 1911, only 9 developed ear trouble, which was either unilateral or bilateral otitis media. None had any mastoid or internal ear manifestations. Five of the patients were children aged from 2½ to 11 years.

J. D. ROLLESTON.

Smallpox of fœtus in the fourth month (*'Austral. Med. Gaz.,'* 1914, xxxv, p. 3).—**C. Hall.**—The mother developed a mild attack of smallpox on October 17 when she was three months pregnant. On November 12 she had abdominal pain and nausea, and on the 17th was delivered of a fœtus which showed numerous oval or circular areas of cicatricial appearance scattered over the skin. No vesicles nor crusts were present. The lesions were most numerous on the face, scalp and neck, but there were many on the body and arms and some on the wrists, palms and soles. Hall thinks that the fœtus must have developed the disease at the same time as the mother, *i. e.* at the third month and had died a month later. As the parents were healthy and free from syphilis the death of the fœtus must have been due to smallpox.

J. D. ROLLESTON.

Erysipelas in the new-born (*'Thèses de Paris,'* 1913-14, No. 131).—**L. Delhoume.**—This is a rare affection, only thirty-eight cases, of which thirty-four were fatal, having occurred at the Clinique Tarnier within the last twelve years. Apart from prophylaxis, the various modes of treatment hitherto employed have no truly specific action. Polystreptococcic serum should be used by choice. As the prognosis seems to be improved by the appearance of multiple suppuration, Delhoume suggests fixation abscesses as a method of treatment. The thesis contains the histories of seven fatal cases and of seven who recovered after the occurrence of multiple suppuration.

J. D. ROLLESTON.

Complications of typhoid fever in childhood (*'Osp. dei Bamb. di Milano,'* 1913, II, Nos. 11, 12).—**C. Monti-Guarnieri** reviews the literature and gives brief notes of twenty cases in children, aged from 3 to 8 years. He classifies the complications as follows: (a) Complications due to typhoid fever alone: bronchitis and broncho-pneumonia, endocarditis, cystitis and nephritis, meningeal and meningo-cortical reaction, catarrhal jaundice, herpes and infective purpura. (b) Complications due to associated secondary infections. (1) Pyogenic organisms causing pyoderma, otitis, exfoliative dermatitis and bedsores. (2) Pyogenic organisms and normal microbial flora of mouth causing pultaceous or ulcerative stomatitis. (3) Strepto-diphtheria symbiosis giving rise to ulcero-membranous angina. (4) Tuberculosis.

J. D. ROLLESTON.

Typhoid and paratyphoid fever in infants (*'Thèses de Paris,'* 1913-14, No. 102).—**E. L. Maignou** records two cases of typhoid fever in infants, aged 2 and 19 months respectively, and one of paratyphoid in a baby of 2 months. All made an uncomplicated recovery after two or three weeks' illness. In the paratyphoid cases the milk bottles were not boiled, but were washed with water obtained from a well belonging to a house in which there were two cases of typhoid fever. Reference is made to the cases reported by Achard (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1911, VIII, p. 18, and 1912, IX, p. 38) and by Crozer Griffith (*ibid.*, 1913, X, p. 372).

J. D. ROLLESTON.

Paratyphoid fever in a breast-fed child (*Monatsschr. f. Kinderheilk.*, 1913, xii, p. 80).—**K. Blühdorn**.—An infant aged 12 weeks was admitted to hospital with high fever and frequent loose stools, vomiting subsequently occurred, and there was marked prostration. Paratyphoid B bacilli were found in the stools. Rapid recovery took place after washing out the stomach and intestine. Three days before this child's illness the mother and her other three children, aged 4, 5 and 6, had been taken ill, after eating a sausage, with fever, vomiting and diarrhoea. No bacteriological examination had been made in their case. As the infant had not eaten any of the sausage and transmission by the milk was improbable, the infection must have taken place by contact.

J. D. ROLLESTON.

Some tragic aspects of whooping-cough (*Boston Med. and Surg. Journ.*, 1914, clxx, p. 406).—**P. H. Sylvester** records eight cases in children, aged from 16 months to 6½ years, seven of whom died in from ten to forty-eight hours of the first convulsion, which came on within the second to fifth week of the paroxysmal stage. All had a very high temperature and an increased amount of normal sterile spinal fluid. The surviving case was left an imbecile.

J. D. ROLLESTON.

A case of rabies (*Arch. of Ped.*, 1914, xxxi, p. 9).—**A. Hand** reports a second case of rabies which has come under his observation within three years. The patient was a boy, aged 9 years, who was severely bitten in the face by a dog. The wounds were treated with pure carbolic acid and alcohol, but difficulty in swallowing followed during the night. The parents persistently refused to sanction the Pasteur treatment, and five and a half weeks later the boy had headache and pain in the throat, and had a sudden convulsion during which he felt as if he would die. A hypodermic injection of morphia was given at the hospital, but he rapidly became extremely restless, with a flushed face, widely dilated pupils, and the characteristic hunted expression of rabies. Spasm of the pharynx caused the saliva, which was copious in amount, to be ejected from the mouth, and water, which was asked for, was unable to be drunk. The temperature was 106° F., and the pulse-rate 200. Convulsive movements with opisthotonos occurred, and the boy died the same evening. Necropsy was objected to for three days, but finally the brain was obtained, and Negri bodies were found in one ganglion cell. Rabbits inoculated with an emulsion of this material showed Negri bodies in large numbers in the hippocampus. The diagnosis was thus established. [The author's first case was abstracted in the *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 374.]

T. R. WHIPHAM.

A case of rabies treated with neo-salvarsan and quinine (*Journ. Amer. Med. Assoc.*, 1914, lxii, p. 204).—**M. B. Wesson**.—A Mexican, aged 10 years, was bitten on July 10, 1913, by a rabid dog, the left forearm and throat being badly lacerated. The wounds were cauterised, and dressed daily. Pasteur treatment was persistently urged, but refused. About August 2 the boy became depressed and anxious. There were cephalalgia, loss of appetite accompanied by gastric uneasiness and nausea. The patient's mental condition gradually grew worse, and at times he was intermittently delirious. On the morning of August 6 the wounds were healed, but the scars appeared abnormally livid. The patient was restless, breathing was rasping, and was frequently interrupted by pharyngeal and respiratory spasms;

there was a slight dysphagia. A general hyperæsthesia was present, with photophobia and intolerance to sound. The eyes reacted to light and accommodation; tendon and skin reflexes were slightly exaggerated; the grip of the left hand was much weaker than that of the right, and when the boy attempted to walk the left leg had a tendency to give way. Following the method of Tonin—who in July, 1912, reported a “hopeless” case of rabies in a child, aged 13 years, cured following the use of 0.3 grm. of salvarsan, potassium iodide, tepid baths and stimulants—the patient on admission to the hospital was given 0.4 grm. neo-salvarsan (intra-venously), repeated in twenty-four hours. On this day Moon’s report of rabies cured in dogs with quinine by mouth was received; so the patient was given quinine sulphate by mouth (106 gr. per diem, divided into three doses), and this was continued up to within a few hours of the end. During the course of his illness the temperature ranged from 100.2° F. to 106.2° F., and pulse from 138 to 170. Forty hours before death he was unable to swallow thick liquids, but he could swallow water up to within four hours of his death, though with great difficulty, suffocating pharyngeal spasms occurring after a few swallows. The patient never became violent. Paralysis became general, and death took place, on the second day, from asphyxia during a slight paroxysm. In this case neo-salvarsan, quinine, and other drugs had no influence in checking the advance of the disease or modifying its course in any way, other than possibly controlling convulsions.

T. R. WHIPHAM.

Acute infectious jaundice in children (*‘Med. Record,’* 1913, LXXXIV, p. 260).—**C. Herrman** emphasises the fact that in children many cases of jaundice are due to an acute infection and not to dietetic errors. He has studied ninety-eight cases. The seasonal incidence shows a marked prevalence in October, November, and December, over one half of the cases occurring during those three months. No case was met with in a child under twelve months of age, and only two cases under two years. The commonest age for the malady was between the ages of three and six years. The bacteriology of the disease is not settled. Amongst the symptoms abdominal pain and prolonged loss of appetite are not conspicuous. The temperature is usually raised, but not to a high figure. The pulse is not slow. The jaundice, if deep, may cause itching. The liver was enlarged in a considerable majority of the cases; the spleen was palpable in a minority. In the series of ninety-eight cases there was only one death. In this case the clinical picture was that of “Weil’s disease,” but the case differed from the others in no particular, save in severity. No post-mortem examination was made. For treatment the author recommends soup, lean meat, vegetables, skimmed milk, and bread, and lays particular stress upon the advisability of frequent meals, five or six in the day in order to stimulate the passage of bile into the duodenum. The character of the food is of secondary importance.

REGINALD MILLER.

Noma following infectious disease (*‘Giorn. internaz. di. Sci. med.,’* 1914, XXXVI, p. 193).—**A. Montefusco** records two cases in boys aged 4 years. One occurred at the end of the first week of severe typhoid fever and was cured by an injection of 0.25 arseno-benzol. The other, following diphtheria and measles, was fatal in spite of two injections of arseno-benzol. Both received injections of diphtheria antitoxin without any effect on the noma.

J. D. ROLLESTON.

Changes of the infantile ovary in infectious diseases (*Osp. d. Bamb. d. Milan.*, 1913, II, No. 1).—**P. Sessa** examined the ovaries of seventeen children aged from 10 months to 5 years, ten of whom had died from acute infections, such as scarlet fever, diphtheria, measles, or whooping cough, and seven from chronic infections, especially tuberculosis. In the acute infections he found acute parenchymatous inflammation, which was most marked in the cortex, while in the chronic infections there was a chronic interstitial oöphoritis. In life there had been no appreciable clinical signs suggestive of these organs being affected. Sessa suggests that many obscure cases of sterility in women are due to some severe infection in childhood.

J. D. ROLLESTON.

Dermatology and Syphilis.

Roseola infantum (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1446).—**J. Zahorsky** considers that, although the term "roseola infantilis" of older writers has dropped out, there is a definite syndrome to which the name can be applied. It consists of a prodromal fever ranging from 102° F. to 105° F. and continuous, with moderate morning remissions. There is extreme restlessness at night and drowsiness during the day. The fever falls by crisis within a few hours after the appearance of the eruption, but in some cases a few hours before. The eruption is rose-red, and macular or maculo-papular, and appears in a circular or elliptical manner. It is most marked on the trunk, less so on the face. The back, buttocks, and thighs are generally well covered, but occasionally the lesions may be very sparse and limited to the trunk. There is no concentric arrangement, and the rash is usually not raised much above the skin. There are no catarrhal symptoms except congestion of the fauces. A macular exanthem is sometimes seen on the palate on the day preceding or coincident with the eruption. Koplik's spots are absent. Slight redness of the conjunctiva is occasionally observed. Vomiting and diarrhoea occur in a few instances. The cervical glands are slightly enlarged in most cases, and there is no desquamation. The disease occurs in infants under 2½ years of age, and is not contagious. The active cause is not known, but an intestinal intoxication is possible. The only exanthem for which the condition is apt to be mistaken is rubella, but the features of roseola are distinct. The author gives a brief report of thirty-three cases.

T. R. WHIPHAM.

Infantile eczema (*Med. Record*, 1913, LXXXIV, p. 942).—**B. F. Ochs** regards auto-toxæmia as the cause of many cases of infantile eczema. Absence of vomiting is characteristic of such cases and therefore should be a guide to treatment. They are best treated by cutting down the amount of food and the number of feedings, and by small and repeated doses of calomel. If after a week's treatment there is no improvement, some other cause must be sought for.

J. D. ROLLESTON.

Elephantiasis neuromatosa (*Edin. Med. Journ.*, 1913, XI, p. 421).—**Norman S. Carmichael** reports three cases of elephantiasis neuromatosa of congenital origin which occurred in a married woman, aged 36 years, and her two little girls, aged respectively 4½ and 2½ years. These patients had not been exposed to filarial infection, and blood examination was negative. Operation was refused. The author briefly reviews other papers on this subject.

J. ALLAN.

Multiple tumours of the skin (*Monatsschr. f. Kinderheilk.*, 1913, xii, p. 443).—**E. Schmid** describes the case of a child, aged 11½ years, in whom numerous yellowish-brown pigmented nodules were found on the buttocks, chest, abdomen and back, and to a less extent on the face and extremities. The diagnosis made was Boeck's sarcoid, which shows itself as tuberculous, papular, and diffuse infiltrated forms, the objection to the diagnosis being that some of the nodules were softening and arsenic had no effect.

F. R. B. ATKINSON.

Picric acid in the treatment of skin lesions (*Arch. of Ped.*, 1913, xxx, p. 854).—**H. B. Wilcox** recommends picric acid in aqueous and alcoholic solution or in ointment for its anæsthetic effect, its antiseptic action and its easy application. He obtained the best results in acute eczema, burns, intertrigo, herpes labialis and infected vaccination lesions. The only drawback to the drug is the permanent staining which it causes.

J. D. ROLLESTON.

The Wassermann reaction in children's diseases (*Glasg. Med. Journ.*, 1913, ii, p. 303).—**H. F. Watson** has carried out the Wassermann test in a large number of cases, from which he has obtained some interesting information. In 100 selected children—those with stigmata, specific history in family (abortions, lesions, etc.), and also all cases in which there was a death in the family, whether it seemed suspicious or not, being rejected—the Wassermann reaction was negative in 100 per cent. In the second place 100 cases were taken at random, and, after the result of the Wassermann was known, their physical condition and family history were investigated. Twenty-nine gave a positive result—twelve showed clinical evidence of syphilis, and seventeen were unsuspected, though of the latter it should be noted that eight were mentally defective. In these seventeen cases, unsuspected from physical examination, evidence of syphilis was found in a parent, brother, or sister by obtaining positive Wassermann reactions, and in most cases several members of the family gave positive results. In sixteen cases of congenital heart disease a positive reaction was obtained in every case. Excluding malformations of the heart, patent foramen ovale, etc., congenital heart disease has in the past been regarded as rheumatic endocarditis during fœtal life. If the results of the Wassermann reaction are reliable, then clinical and pathological teaching will sooner or later fall into line with the facts found. The author believes that "congenital heart disease" includes at least two distinct conditions—(a) true congenital heart disease; (b) an infantile type. In the former condition the illness is, in most instances, observed as soon as the child is born. There is a definite specific history, and the child shows evidence of syphilis. The disease is progressive, and the child dies at a very early age—no doubt, partly because of the severity of the lesion, and partly because vigorous antisyphilitic remedies have not been given. In the infantile form, the child is born of a mother who is the subject of rheumatism, and who has had an attack during pregnancy. At birth the child is anæmic and weakly, and about the end of the first week there appears for the first time clinical evidence of heart disease. This condition is never so severe as the former type, and the child does not die at such an early age, though in most chronic cases the cardiac murmur is even louder than in the syphilitic type. In this condition the Wassermann reaction was negative in every case examined. In fifteen

cases of meningitis with more or less hydrocephalus a positive reaction was obtained in every case. This also is a true congenital condition. The history is positive, there is positive clinical evidence, and the disease is progressive, and death results before the end of the third year. J. ALLAN.

The importance of the Wassermann reaction in infant welfare (*'Prag. Med. Woch.'* 1913, xxxviii, p. 621).—**Epstein** regards it as most important that all infants received into public institutions should be tested by Wassermann's reaction. It is essential, in the interests of child and attendants, that unknown foundlings should be so examined. The Bohemian Parliament has, by a recent order, made the examination obligatory. Between May, 1912, and October, 1913, 3691 tests have been made—2299 on children, 1392 on mothers. It is advisable to test the blood both of mother and child. The final results have not yet been worked through, but these were the results of one period. Among 198 mothers 20 gave a positive reaction; of these 20 there were signs of old or recent syphilis in 5. Among 236 children tested in the first week of life 8 were positive; in 5 of these the mothers had signs of syphilis, in 1 the mother's reaction was negative, in 3 the mothers had not been tested. One child who gave a negative reaction subsequently showed signs of syphilis; a second test was then positive.

M. D. EDER.

The importance of the Wassermann reaction from a prognostic as well as a diagnostic standpoint (*'Arch. of Ped.'* 1913, xxx, p. 747).—**W. P. Lucas** draws attention to the importance of examining the parents' blood in cases of congenital syphilis. He describes four groups of cases: (1) When the reaction is positive in both mother and child, the latter always has active syphilis; (2) When the reaction is negative in mother and child, the latter often shows atrophy, or malnutrition, and in these cases the paternal blood is always positive; (3) When the reaction is positive in the mother and negative in the child, the latter may show any parasymphilitic manifestations; (4) When the mother's reaction is negative and the child's positive, active syphilis is present. As regards the prognostic value of the reaction, when this is positive in mother and child the prognosis is bad, and the child should be breast-fed. In the author's cases 70 per cent. of the mothers gave a positive reaction when there was active syphilis in the children, and 44 per cent. of these died in the first year. None of these were entirely breast-fed, while the 55 per cent. which survived were mainly breast-fed. When the mother's reaction is negative the prognosis is more favourable for the child.

C. F. MARSHALL.

Congenital syphilis twenty years after the mother's infection (*'Hospitalstidende'*, 1914, LVII, p. 143).—**H. Boas**. Between December, 1891, and January, 1892, the mother had had fifty mercurial inunctions for syphilis. In the next twenty years she had twelve deliveries, resulting in four healthy children, with negative Wassermann reactions, and eight miscarriages or deaths from syphilis shortly after birth. The child born in 1912 was healthy at birth, but one and a half months later developed a profuse nasal discharge and gave a positive Wassermann reaction. In spite of treatment with calomel, death took place from broncho-pneumonia. The necropsy showed a typical syphilitic flint liver, syphilitic sclerosis of the pancreas, and syphilitic osteochondritis. Spirochaetes were found in sections

of the liver. The mother showed no signs of syphilis, but gave a positive Wassermann reaction. Re-infection in her case could be excluded, and her husband was quite healthy.

J. D. ROLLESTON.

Unilateral Hutchinson's tooth (*Ann. de Derm. et de Syph.*, 1914, 5 sér., v, p. 100).—**C. Audry** records a case in a deaf mute girl, aged 14 years, who had been cured of interstitial keratitis and cutaneous gummata by salvarsan. All the teeth were normal except the left upper central incisor, which was obliquely implanted and shorter than its fellow. The free border was uneven, but it did not show the characteristic notch.

J. D. ROLLESTON.

Hepato-splenomegaly with ascites attributed to late heredo-syphilis (*L'Echo Méd. du Nord*, 1913, xvii, p. 310).—**E. Duhot** and **H. Leroy** report the case of a young man, aged 21 years, with enlargement of the liver and spleen and ascites. History negative, and nothing pointing to hereditary syphilis, except possibly the rudimentary conditions of the genital organs. Wassermann reaction positive in blood and in ascitic fluid. On these grounds the case was diagnosed as one of late heredo-syphilis. Treatment had little effect and the ascites continued to recur.

C. F. MARSHALL.

Glycosuria in congenital syphilis (*Urolog. and Cutan. Rev.*, 1914, xviii, p. 13).—**G. H. Day**.—The patient was a girl, aged 10 years, with congenital absence of the right hand, who for three and a half years had suffered from severe headache, vertigo, loss of weight, and glycosuria. Syphilis was not at first suspected. At the age of ten years she had several epileptiform attacks. Wassermann's reaction was positive and three injections of neo-salvarsan were given. Two weeks after the first injection the epileptiform attacks and headache ceased. The glycosuria diminished perceptibly, and at the end of three weeks the urine was normal.

J. D. ROLLESTON.

Bronchial dilatations and heredo-syphilis in children (*Arch. de Méd. des Enf.*, 1914, xvii, p. 105).—**J. Milhit** draws attention to the occurrence of bronchial dilatations in the subjects of congenital syphilis. He reports three cases, aged 10, 12 and 13 years, with evidence of congenital syphilis, a positive Wassermann reaction, and signs of bronchial dilatation. The pulmonary signs disappeared in all cases after mercurial treatment. Dilatation of the bronchi, as previously pointed out by Hutinel, may occur both in infants and in older children, who suffer from congenital syphilis. In some cases it is associated with tubercle.

C. F. MARSHALL.

Syphilis and congenital heart disease (*Thèses de Paris*, 1913-14, No. 131).—**A. Mikhailovski**.—Heredo-syphilis is a frequent cause of congenital heart disease, though its importance should not be exaggerated. It acts upon the heart in two ways: (1) by creating inflammatory lesions; (2) by impeding its normal development. There are no clinical forms special to heredo-syphilis, but any cardiac disease may be due to this cause. Syphilitic cardiac disease is only distinguished by dystrophic troubles and

other symptoms of heredo-syphilis. Heredo-syphilitic myocarditis is sometimes seen in the new-born. Gummata of the myocardium may be found in myocarditis in which interstitial or parenchymatous lesions predominate or finally fatty degeneration and cardiac sclerosis. The thesis contains the histories of twenty-four cases, including one hitherto unpublished of pulmonary stenosis in a heredo-syphilitic infant, aged 1½ months.

J. D. ROLLESTON.

The syphilitic nature of Sydenham's chorea (*Thèses de Paris*, 1913-14, No. 168).—E. L. M. Roustan says that acquired or inherited syphilis is almost constantly to be found in chorea if a careful clinical and serological examination be made. If necessary, Milian's biological reactivation of Wassermann's reaction should be performed. Rheumatism, which is often invoked as a cause, is almost constantly absent in chorea. On the other hand, rheumatoid and osteocopic pains due to inherited syphilis are frequently present. The absence of any infective or toxic cause except syphilis suggests that syphilis is the cause of chorea. This hypothesis is justified by the infective origin of chorea, which is now generally admitted. The existence of familial chorea is also in favour of a syphilitic origin of the disease. The powerful therapeutic action of mercury and arsenic is easily explained if the syphilitic nature of chorea be admitted, and in any case does not accord with the rheumatic origin of the disease. The thesis contains the histories of forty cases, six of which are original (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1914, xi, pp. 44, 45).

J. D. ROLLESTON.

Hydrocephalus and syphilis (*Gazz. internaz. di Med. Chir. etc.*, 1913, p. 1209).—S. de Stefano, in four hydrocephalic children, aged from 2 months to 5 years, found Wassermann's reaction constantly negative both in the serum of the mother and of the child. His results thus agree with those of Knoepfelmacher and Lehdorf and differ from those of Cannata. He concludes that other causes than congenital syphilis enter into the pathogeny of chronic hydrocephalus.

J. D. ROLLESTON.

The cerebro-spinal fluid in old heredo-syphilis (*Wien. med. Wochens.*, XLIV, p. 505).—H. Przedpelska examined the cerebro-spinal fluid of ten children aged from six months to thirteen years. All but one were long past the florid stage. Lymphocytosis was found in three cases: (1) A child, aged 6½ months, with a maculopapular rash and rotatory nystagmus; (2) a boy, aged 7 years, with tabes incipiens; (3) a girl, aged 2½ years, with syphilitic endarteritis and hemiplegia. Nonne Apelt's reaction (phase I) was positive in a case of tabes incipiens and one of hemiplegia. Wassermann's reaction in the cerebro-spinal fluid was positive in three cases, two of tabes incipiens, and one of hemiplegia.

J. D. ROLLESTON.

A form of heredo-syphilitic spastic paraplegia in children (*Arch. f. Kinderheilk.*, Baginsky Festschrift, 1913, p. 468).—A. B. Marfan describes a form of paralysis under this title, which is distinct from congenital spastic paraplegia (Little's disease), and also from paraplegia due to Pott's disease of the spine and Strümpell's familial spastic paraplegia. Marfan has observed six cases of this kind. In the first there was no definite evidence of syphilis and no result from antisypilitic treatment.

In another case the father was syphilitic, and in two others there was interstitial keratitis in the child. In the two last cases there were several signs of heredo-syphilis and a positive Wassermann reaction. The disease begins after the fourth year and is slow in progress. The first sign is difficulty in walking which gradually increases. This is followed by rigidity of the lower limbs. The feet tend to the position of equino-varus. This spastic rigidity disappears when the patient is at rest. The patellar reflex is increased and there is ankle-clonus. The muscles react to faradic and galvanic currents sometimes normally, sometimes a little less. Sensory and trophic disturbances are absent, there is no muscular atrophy and no sphincter troubles. The upper limbs are not affected. A characteristic sign of this disease is the loss of pupil reflex to light, sometimes also to accommodation. Lumbar puncture showed leucocytosis. The Wassermann reaction was positive in both serum and cerebro-spinal fluid. In two cases there was arrested mental development. The above symptoms point to a lesion of the pyramidal tracts of the dorso-lumbar region of the cord. There is no tendency to recovery. Marfan considers this a special type of disease distinct from other heredo-syphilitic affections of the spinal cord which have been described. It more resembles Erb's syphilitic spinal paralysis of adults, but differs from this in the absence of sphincter troubles, and in the constant presence of pupil affection.

C. F. MARSHALL.

Syphilitic diseases of joints and bones in childhood; their differential diagnosis from the medical standpoint (*Med. Press*, 1913, II, p. 318).—**Sydney A. Owen** draws attention to some of those conditions which the physician may confound with syphilitic bone and joint disease in infancy and childhood. In infants under one year no joint affection, with the rarest possible exception, is due to rheumatism, and at this period of life confusion is most likely to arise in atypical cases of infantile scurvy. In children who have reached the "walking period," attention is drawn especially to (1) the hyperæsthesia, subjective pains, and pseudo-paresis seen not infrequently in fat, rickety children; (2) the acute hyperæsthesia, the toneless, flabby state of the muscles, which may precede for a short time the definite onset of paralysis and loss of deep reflexes in cases of early poliomyelitis. Among the conditions in older children likely to lead to confusion, osteo-arthritis and rheumatoid arthritis, Clutton's symmetrical synovitis, Chareot's joint, joint conditions in hæmophilia, leukæmia, purpura rheumatica, etc., are discussed. The author points to the value of the Wassermann test in doubtful cases.

J. ALLAN.

Treatment of syphilis in the child by salvarsan (*Arch. de Méd. des Enf.*, 1913, XVI, p. 892).—**A. Galliot** has collected statistics from literature of 145 syphilitic pregnant women treated by salvarsan. They gave birth to 133 healthy children, who were still in good health when seen several months later. Salvarsan is therefore of the highest value in conceptional syphilis, and is to be preferred to any other drug. On the other hand the treatment of heredo-syphilitic infants by salvarsan is to be deprecated, and the classical treatment of mercury is to be preferred. Out of 56 cases collected from literature, death occurred in 14.28 per cent., no result in 21.41 per cent., transient improvement with relapse in 25 per cent., and permanent improvement in 19.28 per cent. The remaining cases had not been followed up long enough to allow any conclusion. Salvarsan is an excellent drug for the

treatment of active lesions in older children. It is also of value in association with mercury in the treatment of dystrophies. The following doses are recommended: At the age of six years one should start with a dose of .05 neo-salvarsan and increase it to .10 or .15 grm., according to the age. From 6 to 10 years, the doses should range from 0.10 to 0.20 grm. Above 10 years the doses may be increased up to 0.30 grm. neo-salvarsan. There should be a series of four or five injections with one injection weekly.

J. D. ROLLESTON.

Reviews.

STAMMERING AND COGNATE DEFECTS OF SPEECH. By C. S. BLUEMEL. 2 vols. New York: G. E. Stechert & Co. Price 20s. net.

UNDER this title, the author has given us a treatise on certain disorders of speech, viewed from the point of the psychologist.

The first half of the first volume is devoted to the definition of some of the elementary principles of psychology, and an explanation of the localisation and working of the various cerebral centres concerned in speech. These chapters lead up to a description of the various types of aphasia, which, while containing nothing new, is exceedingly compact, well arranged, and readable, and is, moreover, profusely illustrated by cases selected from well-known authorities.

The second half of the volume is entirely given over to a theory as to the causation of stammering.

Stammering, the author would have us believe, is, in its simplest form, primarily a transient auditory amnesia. In the author's own words, for stammering to occur all that is necessary is that there shall be a temporary auditory amnesia, without kinæsthetic verbal amnesia, in other words, typical stammering is due to the fact that an intact articulatory mechanism permits of the commencement of a word, while temporary failure of the auditory image of that word creates a delay in its continuance.

This auditory amnesia he considers may be either congenital or acquired; and the prevalence of stammering in childhood, he attributes to the unstable character of the various cerebral centres at this age.

In addition to this primary cause, the author recognises secondary or collateral causes, which tend to confirm or perpetuate, and in many instances aggravate the primary simple defect. These he classifies and discusses under the headings of multiple thought and mental confusion, fear and auto-suggestions, and perversion of verbal imagery by false kinæsthetic impressions. The latter would seem to be his explanation of the acquirement of stammering by imitation.

The treatment recommended is, as would be expected, directed towards counteracting these causal factors—improvement of the general health is recognised as of importance—fear and auto-suggestion and subsequent inhibition of will, are to be met by encouragement and an intelligent explanation to the sufferer of the nature of his malady. Multiple thought and mental confusion, the result of the stammerer's attempt to find a

synonym to replace the fatal word over which he stumbles, must be abolished by persuading him always to face his difficulty. Distortion of verbal imagery is to be counteracted by making increased use of conditions under which the patient speaks fluently, *e. g.* reading in unison with someone else. Finally, physical struggles and contortions are to be corrected by ordinary elocutionary methods.

But it is clear that, if the author is correct in his theory of primary causation, there still remains the elimination of the auditory amnesia.

This, we are told, may disappear when the secondary causes, which have helped to perpetuate it, have been removed. If a marked defect of speech remains, *i. e.* if a severe auditory amnesia is present, it is suggested that some means must be found, either to stimulate that centre to fresh activity or to strengthen it or replace it by an increased use of his visual and kinæsthetic imagery. Stimulation of the defective centre appears to be only possible by a studied repetition of difficult sounds and words.

We think it is fair to say that in the treatment advised there is nothing new beyond the suggestion of re-education *visû* visual and kinæsthetic imagery, and these latter methods hardly appear to us as satisfactory or easily applicable, nor does there appear in the book any proof of its value.

Volume II is occupied with a review and criticism of most of the methods, quack and otherwise, which have at one time or another been advocated as "sure" cures for stammering. This volume might well be published separately as a warning to those unfortunate sufferers of what to avoid. At the end of volume II we have a glossary and bibliography. The former appears to us entirely unnecessary. Its suggested use, namely, to make the book available to the youthful stammerer, is out of the question, in view of the difficult and highly scientific nature of the subject. The bibliography and references generally, however, are invaluable, and show how widely the author has wandered in his effort to thoroughly master his subject.

On the whole we can certainly recommend this work to those interested in disorders of speech, as one containing both original and interesting ideas.

E. B. S.

L'ENFANT ET SON MÉDECIN : GUIDE PRATIQUE DE L'HYGIÈNE ET DES MALADIES DE L'ENFANCE. Par le Dr. ALBERT B. BALL. Deuxième édition. 1914. Paris : A. Maloine. Price 6 fr. 50 c.

THIS book contains in a condensed form a vast amount of sound and useful information—more than at first sight would appear to be the case. It consists for the most part of accounts in dictionary form of practically all the ills that the child is heir to. Under each disease the ætiology, signs and symptoms, diagnosis, prognosis, and treatment are succinctly, but fully dealt with—indeed, there is no room for a superfluity of words—and the text abounds with cross-references, which are saving of time and very useful. The descriptions on the whole are good and complete, and the treatment comprises the latest methods. So complete is the book in its way that we cannot refrain from making a few suggestions to the author for a future edition. For instance, we should like to have seen separate accounts of such conditions as the myopathies, achondroplasia, and infantilism. The description of cretinism is inadequate. More, it is true, is given under the heading of myxœdema, but to this there is no cross-reference. The account of leukæmia also is somewhat meagre, no details of the blood-changes being

given. Further, we could find no reference to the Mongolian form of diocy.

A noticeable feature of this part of the book is the inclusion of the derivations of the various medical terms, but some laxity is apparent as regards the Greek accents and breathings, and on page 107 there is a misprint.

Further information concerning the child is to be found in the lists of drugs and doses, and in the sections on development and feeding, and on the examination of children. General hygiene is also dealt with, and at the end are lists of institutions and health-resorts, which may be useful for patients going abroad. There is also a very full index.

The book should be of service to the busy practitioner, as much is comprised within a small compass. It is a small octavo, printed on thin paper, and although it contains over 400 pages, it weighs only 6 oz. and is no more than three-eighths of an inch in thickness.

T. R. W.

CONFÉRENCES PRATIQUES SUR L'ALIMENTATION DES NOURRISSONS. Par le Dr. P. NOBÉCOURT, professeur agrégé à la faculté de médecine de Paris, médecin des hôpitaux. Deuxième édition, 1914. Paris: Masson et Cie. Pp. 373 + xxvi. Price 5 fr.

In a previous issue* we have already spoken favourably of this book of lectures on the feeding of infants, and we now welcome a second edition. This consists of a re-issue of the original lectures, with the addition of five new ones on the feeding of delicate and sick children. There are also some additional charts and diagrams. The new lectures contain many useful hints and suggestions and fully maintain the standard of Dr. Nobécourt's previous work.

The book is one which we can recommend to all who are interested in the subject.

T. R. W.

CARBON DIOXIDE SNOW: ITS THERAPEUTIC USES (METHODS OF COLLECTION AND APPLICATION). By J. HALL-EDWARDS, L.R.C.P., F.R.S. Edin., Hon. F.R.P.S. London: Simpkin Marshall, 1913. Price 3s. 6d. net.

In this small book of seventy-eight pages, Mr. Hall-Edwards, of Birmingham, has brought together details as to the employment of solid CO₂, originally introduced to the notice of the profession by Dr. Allen Pusey, of Chicago. That solid CO₂ is a useful addition to our means of dealing with various morbid conditions of the skin is undoubted, and owing to its cheapness is within the reach of the majority. Therefore the need of caution in its use is duly noted in the little book before us. That it is of value in certain forms of rodent ulcer has been demonstrated, but that it is a positive cure is quite another matter. Whatever method is employed for rodent ulcer, it is essential that the case should be followed up for recurrences. This holds good for CO₂ as for any other mode. Again, in superficial nævi the results are disappointing, though *à priori* just the reverse was expected by the sanguine. With regard to lupus vulgaris the results do not amount to much, and in scrofuloderma CO₂ makes matters worse. As to lupus erythematosus, types of this condition have to be selected. In some CO₂ is

* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 478.

excellent, but in others the condition may be aggravated. The ensuing pain in lupus erythematosus patches near the scalp may be very great indeed, and last for some time. The danger of CO_2 and its ready application is that it has been, and will continue to be, used rather indiscriminately. The selection of suitable cases for CO_2 is the point which must not be lost sight of. An index would have been useful, and the trade advertisement at the end might well have been left out.

GUY'S HOSPITAL REPORTS. By F. J. STEWARD, M.S., and H. FRENCH, M.D. Vol. lxxvii, 1913, pp. 356, 4 plates. J. & A. Churchill. Price to non-subscribers, 10s. 6d.

IN addition to a number of interesting papers which have not appeared elsewhere this volume contains a list of the books in the Wills Library written by Guy's men; this has been completed by Mr. Wale and is enriched by biographical notes on the authors. The sympathetic "In Memoriam" of Sir Samuel Wilks by Dr. Hale White is accompanied by a plate of this eminent president of the Royal College of Physicians and by appreciations from Sir Bryan Donkin and Sir George Savage. The third series of neurological studies brought out under Dr. Hertz's supervision contains an account of four cases of cerebellar ataxia in children, and a description of a case of polio-encephalo-myelitis associated with optic neuritis and myocarditis as shown by a transient systolic apex murmur in a girl, aged $12\frac{1}{2}$ years. Dr. Hertz also reports a case of parathyroid insufficiency in a man who, after thyroidectomy, manifested the symptoms of severe Graves's disease except that his eyes were sunken. As treatment with dried parathyroid gland succeeded after everything else had failed, parathyroid insufficiency appears to be the explanation. Dr. Poulton contributes a review on creatinine and creatine, and Dr. Kennaway "Some Notes on the Excretion of Acetone Bodies," in which attention is drawn to the liability of children, especially those between three and four years of age, to show acetonuria after admission to hospital. In his study of 440 cases of inguinal hernia Mr. W. E. Tanner finds that 31 per cent. of the cases were noted at birth and during the first year of life. Drs. Fawcett and Rippmann's valuable statistical article on carcinoma of the gall-bladder associated with gall-stones shows that the symptoms of previous cholelithiasis are usually absent, and from this it follows that though a diagnosis of the gall-stones may justify surgical interference on the ground that inflammatory complications may result, the possibility of carcinoma should not be used as an argument. In a thesis of about 60 pages on parasyphilis of the nervous system, Dr. A. R. Wilson brings forward evidence to show that some cases of primary optic atrophy, primary lateral sclerosis, and progressive muscular atrophy are parasyphilitic.

H. D. R.

THE MEDICAL ANNUAL: A YEAR-BOOK OF TREATMENT AND PRACTITIONER'S INDEX, 1914. Thirty-second year. Bristol: John Wright & Son, Ltd. Price 8s. 6d. net.

OWING to the remarkable medical activity of the past year the present volume has been enlarged by the addition of about a hundred pages.

Recent work on children's diseases is ably summarised by Dr. F. Langmead, especially in the articles on infant feeding, and on anæmia, pyelitis,

rheumatism, syphilis, and tuberculosis occurring in children. With the exception of parotitis and pertussis, which are discussed by Dr. Langmead, acute infectious diseases are reviewed by Dr. Goodall.

Other articles of pædiatric interest are those on diseases of the heart by Dr. Carey Coombs, on otitis media by Dr. George L. Richards, on epidemic poliomyelitis by Dr. Purvis Stewart, and on spinal deformities and their treatment by exercise by Mr. Kellett Smith.

It is pleasing to find that ample use has been made, and due acknowledgment given to this JOURNAL's original articles, societies' reports, and abstracts from current literature.

The printing is good and the illustrations, many of which are coloured, are excellent. We have not detected any misprints, but the false concord "eczema syphilitica" (pp. 79 and 597), faithfully copied from the original article, shows that editors, like Homer, may occasionally nod.

An excellent index is prefixed to the volume, but we would suggest that the addition of an authors' index, such as is to be found in every Jahrbuch and Centralblatt, would considerably add to the usefulness of this invaluable work.

J. D. R.

REPORT ON AN INQUIRY INTO THE CAUSES OF DEATH IN MEASLES. By H. THURSFIELD, M.D., F.R.C.P. Report of the Medical Officers, 1912-13, Appendix B, No. 2. London: Darling & Son, 1914.

THIS report, which is mainly based on the study of cases treated in the hospitals of the Metropolitan Asylums Board, is divided into three parts. In the first the writer considers the statistical evidence of the causes of death in measles, in the second he describes his bacteriological examinations of thirty-four fatal cases, and in the third he reviews the bacteriological investigations of other observers.

The main conclusions are as follows:

(1) The most frequent cause of death is a septicæmia caused by the *Streptococcus pyogenes*, which causes death towards the middle or end of the second week. In most, but not all, cases there is a well-marked broncho-pneumonia.

(In view of the alleged close relationship between measles and tuberculosis it is noteworthy that in elaborate post-mortem investigations made by Dr. Thursfield on thirty-four cases no evidence of pulmonary or glandular tuberculosis could be discovered, and in another series of twenty-nine cases there was only one instance of gross tuberculous broncho-pneumonia, which was probably present before the measles attack.)

(2) The most probable source of infection with *Streptococcus pyogenes* is a septic condition of the mouth, fauces and naso-pharynx.

(3) Next in importance to *Streptococcus pyogenes* are pneumococcal infections, which usually kill more quickly, causing death at the end of the first or beginning of the second week.

(4) *B. influenzae* plays a part in the production or prolongation of broncho-pneumonia, which, after septicæmia, is the most frequent cause of death.

(5) Of thirty-one deaths in which bacteriological evidence of disease was found eighteen were due to various forms of septicæmia, and in thirteen the cause of death was broncho-pneumonia. Of three cases in which no bacteriological evidence was obtained one death was due to diarrhœa and two to broncho-pneumonia.

(6) In the nursing of cases with streptococcal infection special care should be taken to prevent transmission to other patients. J. D. R.

VACCINOTHÉRAPIE DANS LA FIÈVRE TYPHOÏDE. By ARNOLD NETTER. Paris: Masson et Cie. Pp. 27.

THIS pamphlet consists of the writer's communications to the Société Médicale des Hôpitaux and the Académie de Médecine in April, May and July, 1913. In addition to an analysis of 1318 cases of typhoid fever recorded by forty different writers, Dr. Netter gives an account of his own experience with Besredka's sensitised vaccine, which he used in twenty children suffering from typhoid fever. His results were very satisfactory. The mortality during the first six months of 1913 sank from 18 per cent. to 7.14 per cent., the duration of the fever after admission to hospital was fourteen instead of twenty-one days, and the percentage of relapses was twenty-three instead of thirty-three. The favourable effects of his injections were also shown by attenuation of symptoms and the prompt disappearance of the typhoid state.

The best results were obtained with doses of 500 millions used for three days in succession. There was very slight local reaction. In one case the injection was followed by symptoms of appendicitis, which subsided in forty-eight hours, and in another by cholecystitis which lasted for a week. Increase in size of the spleen was constant after injection.

J. D. R.

THE GREAT SCOURGE AND HOW TO END IT. By CHRISTABEL PANKHURST. London: 1913. E. Pankhurst. Price 1s. net.

Miss Pankhurst states that one of the chief objects of this book is to enlighten women as to the true reason why there is opposition to giving them the vote. That reason is "sexual vice." While this is, undeniably, one factor of the opposition in certain quarters, still stronger ones are, the indifference of the great mass of women whom the suffragists have not yet converted, the anxiety of male voters to secure other reforms first, and the fact that no Government sees any political advantage which will accrue to its own party through the enfranchisement of women.

The extracts quoted from Prince Morrow, Marshall and several other writers on syphilis and gonorrhœa will not only enlighten women on the dangers of marriage, but also enable them to understand that a considerable degree of men's injustice to women has been the inevitable result of their own physiological ignorance.

Admittedly the first step towards the prevention of sexual diseases must be open recognition of their extent and significance.

Miss Pankhurst's surprisingly naive assumption that votes for women will, enforcedly or otherwise, necessarily bring about chastity for men shows a very limited knowledge of human nature and the world at large. Sexual problems are complex even in communities otherwise simple or even primitive.

Nevertheless, this courageous and necessary book will undoubtedly help both women and men to realise and deal with their mutual interests and those of the next generation in a scientific and reasonable manner.

L. A. F.

DENTAL DISEASES IN RELATION TO PUBLIC HEALTH. By J. SIM WALLACE, D.Sc., M.D., L.D.S. Formerly Dental Surgeon and Lecturer on Dental Surgery, London Hospital. London. Published at the offices of 'The Dental Record,' Alston House, Newman Street, W. 1914. Price 3s. net.

As is well known, Dr. Sim Wallace is one of the pioneers of the modern dietetic *régime* for children in the prevention of dental caries, and in this small volume he puts forward his views on this subject in a most capable manner. The aim of the book is to bring home to physiologists and others the importance of a knowledge of the physiology of oral hygiene, a subject which, notwithstanding its overwhelming importance at the present day, is altogether neglected in text-books of physiology. The author's views are now receiving more wide-spread acceptance, and we feel sure that before long they will be almost universally held. To all who wish to study the question of dental diseases in relation to diet we can recommend this small book. It is pleasantly written, is full of useful practical information, and ought to be perused by all medical men and dental surgeons. It is particularly suited for those engaged in the work of the medical inspection of school children.

J. A.

A MANUAL OF PRACTICAL CHEMISTRY. By A. W. STEWART, D.Sc., Assistant Demonstrator of Chemistry at the Royal Institute of Public Health. London: John Bale, Sons & Danielson, Ltd., 89-91, Great Titchfield Street, Oxford Street, W., 1913. Price 3s. 6d. net.

This small volume is intended for the use of students doing D.P. H work. It is divided into six parts which deal respectively with acidimetry and alkalimetry, air analysis, water analysis, analysis of foods and beverages, disinfectants and preservatives, and microscopical work. On the whole the matter given is accurate, but occasionally the directions are not very clear. The book is, in our opinion, inadequate for the requirements of those working for a Public Health Diploma, but as it is interleaved, it can be much amplified by the addition of notes. At the end are given some specimen examination questions. A practical manual such as this would be welcomed by D.P.H. students, and we hope Mr. Stewart will enlarge the volume when a new edition is called for.

J. A.

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Original Articles.

AURICULAR FLUTTER IN ACUTE RHEUMATIC CARDITIS.*

By G. A. SUTHERLAND, M.D., F.R.C.P.,

*Physician to the Hampstead and North-West London Hospital, and Physician to
Paddington Green Children's Hospital.*

ACUTE rheumatic inflammation of the heart is associated with changes in the endocardium, the pericardium, and the myocardium. One or more of these structures may be involved, and in some cases all are. At the present time it is generally recognised that although endocarditis and pericarditis may be present, the important question in determining the prognosis is how far has the myocardium been involved. More especially does this apply to the muscle of the left ventricle, on which the efficiency of the circulation must, in the last instance, depend. If the heart does give out we are inclined to trace this to the weakening effect of the inflammatory changes in the myocardium.

There is another factor which may possibly play an indirect but important part in leading up to cardiac failure in cases of acute carditis, and that is the development of an abnormal rhythm of the heart. The onset of an abnormal rhythm does not necessarily mean

* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on April the 24th, 1914.

that the action of the heart is irregular, as tested by the ordinary methods. In acute carditis the rate of the heart is usually greatly increased, and one is often struck by the absolute regularity of the action under this increase of rate. The ventricular action as tested at the apex is perfectly regular, and this finding is confirmed on feeling the pulse. Similarly a long tracing from the radial artery will probably show absolute regularity in the spacing of the beats, when the cardiac rate is from 120 to 150 per minute. Various forms of youthful irregularity, which may have been present before the attack, are completely abolished when the cardiac action becomes rapid. Estimated then by the pulse or by the apex beat the cardiac action in acute carditis is usually found to be perfectly regular, and from this one is inclined to infer that the normal cardiac rhythm is present. The above tests, however, are dependent entirely on observation of the action of the ventricles, while in the majority of cases an abnormal rhythm is developed in the auricles and not in the ventricles. If the regular action of the ventricles is not interfered with, the presence of an abnormal rhythm developed in the auricles may be entirely unsuspected, and may indeed be unrecognisable by the ordinary methods of examination at the bedside. The action of the auricles can be determined more precisely by means of the electro-cardiograph and less precisely by means of the venous tracing taken with the polygraph.

I have recently met with two cases of acute rheumatic carditis in which there was apparently an abnormal rhythm of the auricles, and which was recognised only on taking a venous tracing in the neck. The form of disorder was one in which the auricular rate was greatly accelerated, while the ventricle did not share in this acceleration. In other words a number of the auricular contractions failed to be followed by ventricular contractions. Such a condition may be due to the presence of heart-block, or to the failure of the ventricle to respond to all the stimuli reaching it at the increased rate. In the cases referred to the auricular and ventricular rates were perfectly regular. Taking into account the rapidity and the regularity of both auricular and ventricular contractions, I am inclined to trace the slower ventricular rate not to any interference with the conductivity of the junctional tissues (heart-block), but to an inability on the part of the ventricle to respond to each auricular stimulus, owing to the extreme rapidity of the auricular contractions. It seems to be rather contradictory to speak of heart block when the ventricle is contracting 125 to 140 times per minute.

The first tracing (Fig. 1) was taken from a female child, aged 8

years, suffering from rheumatic carditis. The lower part is from the radial artery and shows a regular action at the rate of 140 beats per minute. The slight irregularity in the force of the beats is due to movements of the arm associated with respiration. The upper part is the venous tracing from the neck. The action of the auricles as here represented is also regular and the waves occur at the rate of 280 per minute. It is suggested that each of these

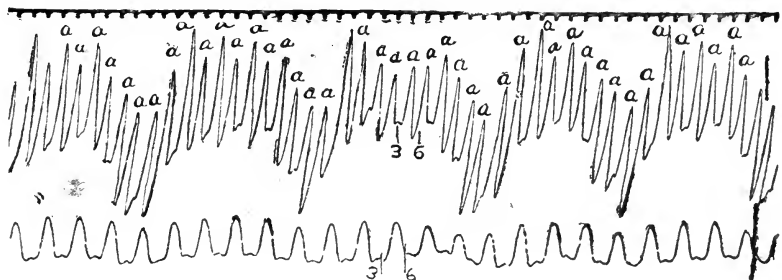


FIG. 1.—(Case 1). Jugulo-radial tracing. Note the amplitude and similarity of the venous waves. If each venous wave represents an auricular contraction, the auricular rate is twice as rapid as the ventricular ($A : V :: 2 : 1$), the auricle beating 280 and the ventricle 140 times per minute.

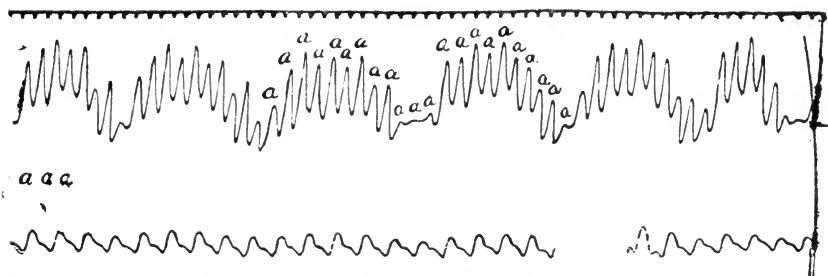


FIG. 2.—Same case, following day. Jugulo-radial tracing. Two venous waves for each radial beat ($A : V :: 2 : 1$). Same character of venous pulse. Auricular rate still 280, and ventricular 140 per minute. The large undulations in venous tracing are respiratory in origin.

waves represents a contraction of the auricle. As compared with an ordinary venous tracing the following points may be noted as regards the waves; the excessive amplitude, the similar character, the identical spacing between each, and the absence of the normal $a - c - v$ waves on inspection or measurement. The large undulations in the tracing are due to the exaggerated respiratory movements present. On the following day another tracing was taken (Fig. 2) which shows the same characteristic features as the last, the amplitude of the venous curves being less marked. The

auricular rate is still 280 and the ventricular 140 per minute. Three days later the third tracing was taken (Fig. 3), which shows a normal venous curve. The auricular and the ventricular rates were now the same, namely 105 per minute.

The second case was a girl, aged 6 years, suffering from acute pericarditis and myocarditis, supervening upon former rheumatic cardiac disease. She was acutely ill and dyspnoëic, and consequently the taking of venous tracings from the neck presented considerable difficulty. The first tracing (Fig. 4) shows the dicrotic form of

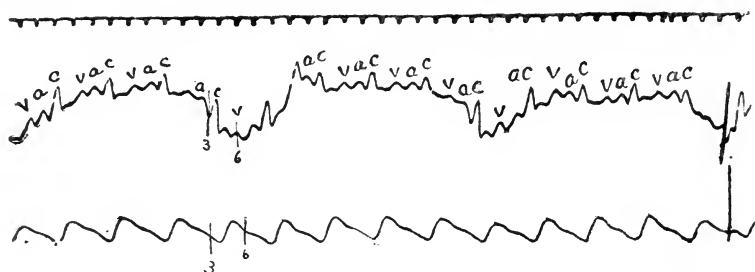


FIG. 3.—Same case, three days later. Jugulo-radial tracing. Venous tracing is normal. Auricles and ventricles beating at the same rate, 105 per minute.

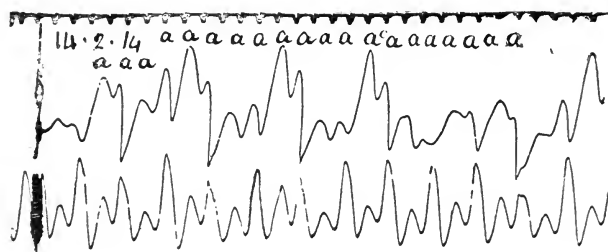


FIG. 4.—(Case 2). Jugulo-radial tracing. Suggested that venous waves are due to auricular contractions. They are double in number the contractions of the auricle (A : V :: 2 : 1). Auricular rate 250 and ventricular 125 per minute.

radial pulse common in such conditions. The venous part shows a succession of similar waves, although much affected by respiratory movements, following each other in rapid succession with great regularity, and not easily identified according to an ordinary venous interpretation. I have suggested as indicated by the marking that these waves are due to auricular contraction. They occur at the rate of 250 per minute, while the ventricular contractions are 125 per minute. The next tracing (Fig. 5) was taken two days later and shows a similar condition, the auricular rate being still double that of the ventricle. A further tracing (Fig. 6) was taken a week later and shows three venous waves for every radial beat. The

character of these waves suggests that they are due to auricular contractions, in which case the auricles would be contracting at the rate of 390 per minute while the ventricular rate was 130, *i. e.*, an auriculo-ventricular ratio of three beats to one. The presence of pulsus alternans is shown in the brachial tracing here, and also in (Fig. 7).

These tracings would appear to show the presence of an abnormal action of the auricles which seems to me to correspond in many

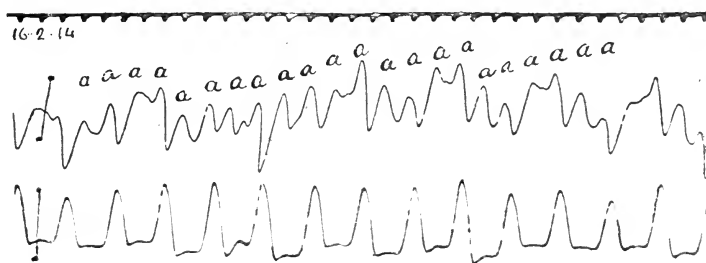


FIG. 5.—Same case, two days later. Jugulo-radial tracing. Same form of venous curve. $A = 250$. $V = 125$.

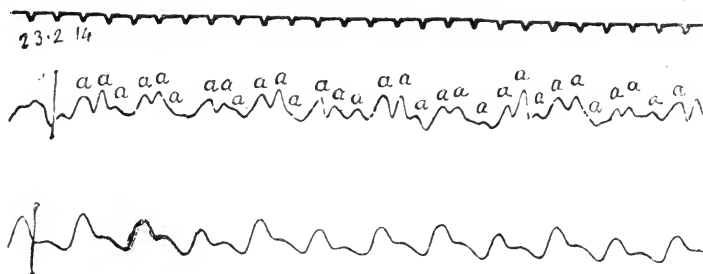


FIG. 6.—Same case, seven days later. Jugulo-radial tracing. Three auricular contractions to each ventricular contraction ($A : V :: 3 : 1$). Auricular rate is 390 and ventricular is 130 per minute.

respects with the so-called auricular flutter. I am quite aware that other explanations may be offered, and that the above one may be quite wrong. In acute cases such as the above the electro-cardiograph which might settle such a question is not available for most of us, and we must still make the best of other methods of examination. In many cases of acute carditis the respiratory movements are so exaggerated that it is impossible to take jugular tracings with the polygraph, and the ones here shown have many imperfections owing to the respiratory distress. Among the irregularities of the cardiac action associated with diphtheria Dr. W. E. Hume* believes that

* 'Heart,' 1913, v, p. 25.

he has found in two cases the presence of auricular flutter, the patients being aged seven years and five years respectively. The auricular rates in his cases were between 480 and 500, and although no such rapidity has been found in adult hearts, he suggests that the auricles of a child may be capable of attaining a higher speed than those of adults. A point in favour of the view that an abnormal rhythm was present in my cases lies in the occurrence of the pulsus alternans in one. Dr. Mackenzie informs me that in his experience that form of pulse is found in the young only in association with some abnormal form of rhythm.

Such a form of disordered rhythm may have an important bearing on the efficiency of the cardiac action. The normal mechanism of the heart consists of an orderly sequence in auricular and ventri-

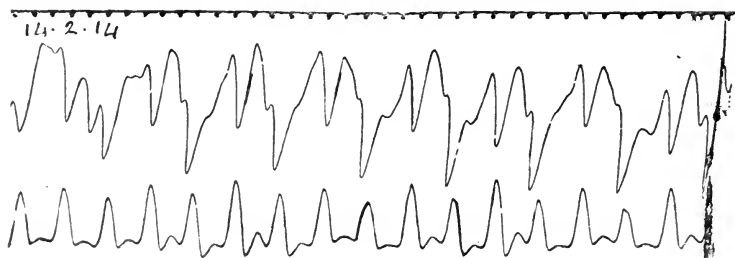


FIG. 7.—Same case. The pulsus alternans is shown in the radial tracing, and also in Fig. 6.

cular contractions. If this sequence is disturbed, as by auricular flutter, the ventricles will fail to receive their proper amount of blood at the proper time. They will be irregularly and incompletely filled. As a large number of the auricular contractions take place while the ventricles are in a state of systole the result will be a reflux into the veins and a damming back of the venous blood (back pressure). While a healthy heart might continue for some time to carry on the circulation quite efficiently under this condition, the position is different when acute carditis is present. The already weakened heart may find itself hopelessly crippled by the supervention of auricular flutter, and the signs of cardiac failure may be rapidly induced or gravely aggravated. Such a result has now become familiar in connection with an allied condition of auricular disturbance, namely fibrillation, where the disordered rhythm leads to great impairment of the cardiac action.

As already pointed out the condition of auricular flutter is often latent and unsuspected. As practical points for further investigation

I might suggest that attention be paid to the following possible indications of the presence of this abnormal form of rhythm.

(1) Attacks of cardiac asthma (great dyspnœa) occurring suddenly and without accompanying variations in the cardiac condition. In one of the above cases there were two such attacks preceding the acute illness, and they were at the time diagnosed as asthmatic in origin. (2) A triple or galloping or cantering rhythm heard on auscultation. In both of the above cases there was a triple rhythm present, heard both at the apex and in the neck. In Dr. Morison's case of jugulo-embryocardia, which was the first example of auricular flutter recorded, each auricular contraction was audible in the right supra-clavicular region, the auricular rate being 240, while the ventricular was 114. (3) Pericarditis without effusion and with great respiratory distress. The inflammatory changes in pericarditis are usually earlier and more marked about the auricles than the ventricles, and a disturbed auricular rhythm may follow from the active effusion in and around the auricular walls. (4) Dyspnœa, cyanosis, and enlargement of the liver out of proportion to the physical signs of disease in the heart. (5) The presence of the pulsus alternans.

Further investigations will be required to determine whether in cases of acute carditis a disordered rhythm of this nature is often present. If it is found I should be more hopeful of the treatment, for a disordered rhythm will respond to treatment by means of digitalis much better than a ventricle weakened by acute inflammation or toxæmia will. If we can control the rhythm we shall place the patient in a much better position for weathering the attack. On the other hand if we cannot control the disordered rhythm, it may be found that the prognosis is made materially worse by the development of this abnormal auricular action, as compared with those cases in which no such disorder of the mechanism is present.

Case (1) A female child, aged eight years, was admitted with the history of pain in the neck for a week, and more recently of pains in the knees and hands. There was no history of previous rheumatic infection.

On admission her temperature was 101.2° F., the pulse was 132 and regular, and the respirations 30. There was no actual swelling of the joints, but pain on movement was complained of in both wrists, in the fingers and in the knees. The tonsils were definitely enlarged. The apex beat of the heart was palpable in the fourth space a quarter of an inch outside the nipple line. The right border did not extend beyond the right edge of the sternum. The apex beat and heart sounds were feeble, but the ventricular action was regular.

On auscultation a well-marked triple rhythm was heard at the apex, described as cantering, and ascribed to a reduplicated second sound. No murmur was present. She was ordered one drachm of salicylate of soda daily.

On the third day after admission the temperature reached normal and did not rise again. The arthritic pains soon passed off, but the pulse rate slowed down very gradually. The triple rhythm of the heart was not heard after the second day. There was progressive dilatation of the heart on the left side until the apex extended three quarters of an inch outside the nipple line, and a systolic murmur became audible at the apex. At the end of a fortnight the pulse was regular and good at 80 per minute, and the dilatation was less.

She has been kept under observation for five months and has had a good deal of rest as the cardiac rate runs up quickly to above 100 on any exertion, and a varying amount of dilatation has persisted.

Case (2) A female child, aged 6 years, was admitted to hospital with a history of two days' illness, characterised by pain about the heart and left shoulder, shortness of breath, loss of appetite, sleeplessness, and depression. There was no history of rheumatic fever, but eight months previously the mother was told by a doctor that the child had heart disease, which caused the shortness of breath from which she suffered. Six months previously, she had been in hospital owing to an attack of acute bronchitis. At that time the heart was found to be slightly dilated, and there was a systolic murmur following the first sound at the apex, and conducted well into the axilla. The bronchitic signs soon disappeared, but on the fourth and sixth days after admission she had attacks of severe dyspnoea, lasting for a short time and regarded as asthmatic in character.

On admission the temperature was 102° F., the pulse 140, and the respiration 72. The child looked very ill, the face was pale, and the expression anxious and pained. A troublesome cough was present, which aggravated the pain about the heart. There was orthopnoea and the lungs presented the signs of œdema and bronchial catarrh. There was diffuse præcordial pulsation and both sides of the heart were dilated. A well-marked pericardial rub was present over an area extending from the apex to the sternum. Intra-cardiac murmurs were difficult to distinguish, but a systolic murmur could be heard at the apex. The liver was much enlarged and the veins of the neck pulsated markedly.

The illness ran an irregular course, but there was never any definite improvement. The temperature fluctuated, but seldom rose above

100·5° F. The area of cardiac dullness increased, extending one and a half inches beyond the nipple line on the left, and three-quarters of an inch beyond the right border of the sternum. This was clearly due to dilatation of the heart, as pericardial friction was also present and extending. Pleural friction appeared in the right and then in the left axillary region. Pain in the left shoulder was much complained of. This seemed to be definitely cardiac in origin for there was no evidence of arthritis, and the arm could be moved freely without discomfort.

There was always a mitral systolic murmur present and at times a diastolic one. The pulse continued rapid, averaging about 120, and was soft and dicrotic. Coughing was often troublesome. Dyspnoea was always present and was sometimes aggravated by paroxysmal attacks of great severity. Vomiting occurred at times. Towards the end, which came on the eighteenth day of the illness, some œdema of the lower extremities and of the vulva was present.

At the necropsy the pericardium was found to be adherent to the heart, and intimately so at the base. The pericardium was thickened, acutely congested, and lined with gelatinous exudate. The heart was very much enlarged. The walls were congested, and on section, dripped blood. All the cavities were dilated. The valves presented no change, save that the margin of the mitral valve was thick and puckered. There was collapse of the lower lobe of the left lung, and a patch of pleural thickening and congestion (recent) over the base of the right lung. A microscopic examination of the cardiac tissues has not yet been made.

A FAMILIAL CASE OF SPLENOMEGALIC ANÆMIA WITH INFANTILISM.*

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IN a paper with Dr. G. Dorner,* in January, 1910, on "Four Cases of Congenital Acholuric (so-called Hæmolytic) Jaundice in One Family," I suggested (after French authors) that the term "Splenomegalic Anæmia" might be used for similar cases to those which we described, if the jaundice (that is to say, obvious or *clinical*

* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on May the 22nd, 1914.

† F. P. Weber and G. Dorner, 'Lancet,' London, 1910, i, pp. 227-232.

jaundice) disappeared, though the splenomegaly and characteristic blood-features remained. Such cases of "splenomegalic anæmia" without jaundice may certainly occur (though sometimes perhaps only as temporary phases, the jaundice becoming intermittent instead of remittent) as incomplete or anomalous forms of chronic splenomegalic acholuric jaundice.* The term suggested would serve to distinguish such cases from: (A) forms of anæmia with splenomegaly usually classified under the headings, "Splenic anæmia of adults" and "Banti's disease"; and (B) cases of so-called "infantile splenic anæmia," the "anæmia pseudoleukæmica infantum" of von Jaksch. The case I am now going to describe may perhaps be regarded as an example of such "splenomegalic anæmia."

The patient, E. N., was just 17 years old when I showed him on June the 10th, 1911, at the annual meeting (in London) of the Association of Physicians of Great Britain and Ireland. He then looked rather anæmic, and the conjunctiva over the sclerotics of his eyes had a yellowish tinge. He certainly was small and somewhat infantile in development. In ordinary clothes and boots he measured 5 ft. $1\frac{1}{2}$ in. in height, and weighed 6 st. 9 lbs. His skin was very smooth and tender looking. There was no pubic or axillary hair and the penis and testes were very small. The spleen was enlarged and hard, reaching down into the pelvis, but nothing else was found abnormal in regard to the thoracic and abdominal viscera. The liver could not be felt. The superficial lymphatic glands were not enlarged, excepting very slightly (as so commonly is the case) in the groins. There was no œdema anywhere. Urine (May the 29th, 1911): Specific gravity 1009; slightly acid; free from albumin and sugar; the Gmelin's reaction for bilirubin was negative, but the reactions for urobilin and urobilinogen were positive; the reaction for indican was negative. Blood examination (Dr. G. Dorner, May the 29th, 1911): Red cells, 3,481,100; white cells, 14,300, in the cubic millimetre of blood; hæmoglobin (Sahli's method), 64 per cent.; colour index, 0.9. Differential count of 500 white cells: Polymorphonuclear neutrophiles 63.6 per cent.; small lymphocytes

* Cf. Armand-Delille and Feuillié, "Un cas d'Anémie splénomégaly avec Fragilité globulaire," 'Bull. et mém. Soc. Méd. Hôp. de Paris,' 1909, xxvii, p. 266; Armand-Delille, "L'anémie splénomégaly, par fragilité globulaire, chez l'enfant," Association internationale de Pédiatrie (congress held at Paris in October, 1912) 'Presse médicale,' Paris, 1912, xx, p. 843; Chauffard and Troisier, "Des rapports de certaines anémies splénomégalyques avec l'ictère hémolytique congénital," 'Bull. et mém. Soc. Méd. Hôp. de Paris,' 1909, xxvii, p. 293; Chauffard, Troisier and Girard, "Ictère polycholique aigu à la fois par hémolysémie et par fragilité globulaire, au cours d'une anémie splénomégalyque," *Ibid.*, 1912, xxxiii, p. 726.

26·0 per cent. ; large lymphocytes 6·0 per cent. ; large mononuclears 0·2 per cent. ; "transitionals" 1·0 per cent. ; mast cells 0·8 per cent. ; eosinophiles 2·4 per cent. During the count of the 500 white cells four nucleated red cells (all normoblasts) were seen. Anisocytosis and polychromatophilia of the red cells were marked ; there was likewise, in a lesser degree, some poikilocytosis present. The blood platelets seemed to be of average amount.

Later in 1911 (November) there was moderate swelling behind and below the malleoli of the right ankle. During the differential count of 500 white cells six nucleated red cells (all normoblasts) were seen.

After 1911 I think I did not see the patient till December the 15th, 1913, when he was confined to bed, œdematous and of a ghastly pale colour. The doctor who was attending him arranged for his admission to the German Hospital, but he died at home on December the 24th. The doctor said there was no appearance of jaundice during his final illness, but only of anæmia and dropsy. There was no necropsy.

Early history.—The boy was born at full term with the help of instruments, and was very yellow at birth. A sallowness of complexion with slight yellowness of the sclerotics persisted. As he grew up he was subject to recurrent attacks of "depression," during which his urine became darker, and he appeared yellower and suffered from lassitude and drowsiness. These attacks recurred about every three months on the average and lasted a few days. About 1908 he had several severe attacks of abdominal pain. Occasionally on blowing his nose he noticed spots of blood on his handkerchief ; but he never had regular epistaxis and never had bleeding from the gums or any other form of hæmorrhage, excepting a mild attack of purpura in 1899, when he was four or five years old. At that time, according to Dr. Porter Parkinson, who showed the patient, together with one of his sisters, at the Society for the Study of Disease in Children,* his blood contained many small nucleated red cells (microblasts). His spleen was apparently first noticed to be large when he was three months old. He was subject to nocturnal enuresis. At one year of age he had had croup.

In 1908, when fourteen years old, he came under my care, and on February the 12th, 1909, I showed him at the Clinical Section of the Royal Society of Medicine.† In 1909 he appeared fairly well developed, but anæmic, and his sclerotics had a slight but distinct

* See the 'Rep. Soc. Stud. Dis. Child.,' London, 1906, vi, p. 8.

† 'Proc. Roy. Soc. Med.,' 1909, ii, Clin. Sect. p. 117.

icteric tinge. The spleen was evenly enlarged and hard, reaching downwards to the anterior superior iliac spine. The liver could not be felt. The fæces were coloured. The urine was generally of rather low specific gravity, clear, pale and free from albumin, sugar and bilirubin, but it sometimes showed excess of urobilin. The blood-serum was kindly examined by Mr. L. S. Dudgeon (in November, 1908) at a time when, clinically, the jaundice was scarcely if at all recognisable, and was found to contain bile-pigment. The thoracic organs and other parts of the body showed nothing abnormal, excepting that on one occasion a systolic murmur was heard over the mid-cardiac area, probably not due to organic disease. The fingers were not clubbed; no enlargement of the superficial lymphatic glands or of the tonsils was present; there was no pruritis or cutaneous affection. Syrup of iodide of iron seemed to do the boy good.

The blood, examined during the periods in which the boy was nearest to the normal, sometimes showed the presence of a few normoblasts. In a blood-film of January the 21st, 1909, one of the normoblasts had a double nucleus; in another blood-film of the same date one myelocyte was present in addition to several normoblasts. The red cells varied much in size ("anisocytosis") and staining ("polychromatophilia"). The average diameter of the red cells was, if anything, below the normal standard. A blood-count, on November the 6th, 1908, gave 2,800,000 red cells and 14,280 white cells to the cubic millimetre, and the differential count of white cells (kindly made by Dr. A. E. Boycott) gave: lymphocytes, 20·6 per cent.; intermediates, 4·8 per cent.; large hyalines, 4·4 per cent.; polymorphonuclear neutrophiles, 68·4 per cent.; eosinophiles, 1 per cent.; and mast-cells, 0·8 per cent.; no nucleated red cells were seen on that occasion. A later blood-count (January the 21st, 1909) gave 3,140,000 red cells and 14,500 white cells to the cubic millimetre of blood. The corresponding differential count of 500 white cells (again kindly furnished by Dr. A. E. Boycott) gave: lymphocytes, 20·6 per cent.; intermediates, 5·6 per cent.; large hyalines, 3·2 per cent.; polymorphonuclear neutrophiles, 66·8 per cent.; eosinophiles, 3·2 per cent.; mast-cells, 0·8 per cent. During the count of 500 white cells 20 nucleated red cells were seen. Four of these were typical normoblasts; two were normoblasts with budding nuclei; and fourteen were nucleated red cells with polychrome cytoplasm, irregular in shape and about the size of a typical normoblast. The red cells showed much polychromatophilia and marked anisocytosis (mostly on the small side, as compared to the normal average),

but hardly any poikilocytosis. At a still later blood-examination (by Dr. G. Dorner, on November the 15th, 1909), the number of nucleated red cells was estimated at 729 in the cubic millimetre of blood, when the red cells were counted at 3,533,330 and the total white cells at 23,000 in the cubic millimetre of blood: hæmoglobin (Sahli's method), 50 per cent.; colour index, 0·7; the blood-platelets were not decidedly in excess of the normal. The nucleated red cells were mostly polychromatophilic, and some contained basophilic granules in their cytoplasm (punctate basophilia).

On various occasions the resistance of the erythrocytes towards hypotonic saline solutions was tested by Ribierre's method, and it was found that hæmolysis occurred when a few drops of the patient's blood, diluted with physiological saline solution, were added to a solution of between 0·40 and 0·48 parts per cent. of sodium chloride in distilled water; the "fragility" of the patient's red cells, estimated in this way by Dr. Chapuis, appeared to be slightly greater than the average in normal individuals who were used as controls. On November 25th, 1908, Mr. L. S. Dudgeon kindly examined the patient's blood-serum by a method described by him in the 'Proceedings of the Royal Society,' London, 1908, ser. B, vol. lxxx, p. 531. He found that the blood-serum did not exert any hæmolytic action on the red corpuscles of a healthy individual, or on the red corpuscles of the patient himself (that is to say, it had no auto-hæmolytic action); nor had blood-serum from a normal individual any hæmolytic action on the patient's red cells.

Dr. A. E. Boycott, in May, 1909, kindly estimated the boy's total blood-volume by Haldane and Lorrain Smith's carbon monoxide method,* and reported that it exceeded the normal for the body-weight by 60 per cent. (as apparently it often does in cases of chlorotic anæmia).

No Wassermann's reaction was taken in the present case, but the patient's father and mother showed no signs of syphilitic taint. The mother has had thirteen children and no miscarriages. She said that all her children were born yellow and remained yellow for three to six months after birth, but in the subject of the present paper yellowness or sallowness lasted more or less continuously. The eldest four children died early; the fifth, sixth, seventh, ninth,

* See Haldane and Lorrain Smith, *Journ. of Physiol.*, London, 1900, xxv, p. 331; Lorrain Smith, *Trans. Path. Soc.*, London, 1900, li, p. 311; Lorrain Smith and McKisack, *Ibid.*, 1902, liii, p. 136; Douglas, *Journ. of Physiol.*, 1906, xxxiii, p. 493; Boycott and Douglas, *Journ. of Path. and Bact.*, Cambridge, 1909, xiii, pp. 117 and 256, and *Guy's Hosp. Rep.*, 1908, lxii, p. 157; Oerum, *Deutsch. Arch. f. klin. Med.*, Leipzig, 1908, xciii, p. 356.

tenth, and thirteenth were reported living and healthy*; the eighth was the subject of the present paper; the eleventh died as a baby. The twelfth, a girl with anæmia and splenomegaly without jaundice, died at the age of 1 year and 8 months. She had been shown, together with her brother (the present case), by Dr. Porter Parkinson at the Society for the Study of Disease in Children,† and, though there was no actual jaundice, the skin was stated to have a lemon yellow colour. Her spleen reached down to the anterior superior iliac spine, and her liver could be felt one finger's breadth below the costal margin. Her erythrocytes varied much in size (none very large), and numbered 3,393,000 to the cubic millimetre of blood. Her white corpuscles numbered 52,570, and the differential count gave: polymorphonuclear neutrophiles, 42 per cent.; eosinophiles, 10 per cent.; small mononuclears, 36 per cent.; large mononuclears, 9 per cent.; myelocytes, 3 per cent.

The difficulty in the diagnosis of a case like the present one is to exclude the Gaucher type of primitive splenomegaly.‡ In that disease a yellowish or brownish tinge of the skin has sometimes been noted, as well as a tendency for two or more brothers and sisters to be affected; moreover, the presence of nucleated red cells in the circulating blood has occasionally been recorded, and a very large spleen (such as was present in the boy, E. N.) is perhaps of relatively more frequent occurrence in Gaucher's type of splenomegaly than in congenital and familial chronic acholuric jaundice (examples of which have been reported without even any clinically recognisable splenomegaly at all). On the other hand, the points against the diagnosis of the Gaucher type of splenomegaly and in favour of the case being one of congenital acholuric jaundice, or rather of the

* One of these has, however (since this history was obtained), been under my care with rheumatic fever and rheumatic valvular disease of the heart.

† 'Rep. Soc. Stud. Dis. Child.,' loc. cit.

‡ On the Gaucher type of splenomegaly see especially, E. Gaucher, 'De l'Épithéliome primitif de la Rate,' 'Thèse. de Paris,' 1882, and later writing by the same author; N. E. Brill, 'Amer. Journ. Med. Sci.,' Philadelphia, 1901, cxxi, p. 377; Brill, Mandlebaum, and Libman, *Ibid.*, 1905, cxxix, p. 491, and 1909, cxxxvii, p. 849; F. Marchand, 'Munch. Med. Woch.,' 1907, liv, p. 1102; F. Schlagenhauser, 'Virchow's Archiv,' 1907, clxxxvii, p. 125; J. C. G. Ledingham, in "Allbutt and Rolleston's System of Medicine," vol. v, 1909, p. 766; W. Risel, 'Beit. z. Path. Anat. u. z. allg. Path.,' 1909, xlv, p. 241; P. Rettig, 'Berl. klin. Woch.,' 1909, xlv, p. 2046; A. Plehn, 'Deutsch. Med. Woch.,' 1909, xxxv, p. 1749. Of still more recent articles there are especially the following: Brill and Mandlebaum, 'Amer. Journ. Med. Sci.,' 1913, cxlvi, pp. 863-883; F. S. Mandlebaum, 'Journ. Exper. Med., New York,' 1912, xvi, pp. 797-821; W. A. Downes 'Med. Record,' New York, 1913, lxxxiii, p. 697 (successful splenectomy); Erdman and Moorhead 'Amer. Journ. Med. Sci.,' 1914, cxlvii, pp. 213-224, (early splenectomy); Niemann 'Berl. klin. Woch.,' 1914, li, p. 277.

allied condition of "splenomegalic anæmia" (see my remarks at the commencement of the paper), are practically convincing. The patient's blood contained bilirubin and his urine was free from it. His fæces were well coloured. Examination of his red blood corpuscles (the mean diameter of which was rather below than above the normal standard for healthy individuals) showed hardly any poikilocytosis, but very marked anisocytosis, polychromatophilia, the presence of normoblasts, and a greater tendency to hæmolysis than is usual for normal individuals. Moreover, infantilism has never, as far as I am aware, been observed to accompany the Gaucher type of splenomegaly, whereas it certainly has been recorded in cases of congenital hæmolytic jaundice. Thus Roemer recently described such a case in a child in whom the large hard spleen was removed by operation.*

NOTE.—A further point against the case being one of the Gaucher type of primary splenomegaly should be mentioned, namely, the absence of the pinguecula-like thickening of the conjunctivæ, which N. E. Brill and F. S. Mandlebaum in their paper ('Amer. Journ. Med. Sci.,' 1913, cxlvi, p. 863) on "Large-cell Splenomegaly (Gaucher's Disease)," claim as a characteristic feature. My attention was directed to the importance of this by Dr. H. D. Rolleston in the discussion on my paper. They write: "Early in the disease a change in the conjunctiva of both eyes may be noted. This manifests itself in a brownish-yellow, wedge-shaped thickening, affecting first the nasal side of each conjunctiva, its base being limited by the cornea. Later on the temporal side also becomes the seat of a similar thickening. The development and growth of these thickenings are very slow. . . . They resemble in some respects the lesion of the conjunctiva known as *pinguecula*. . . . We have never seen a case of the disease in which this peculiar ocular lesion was absent."

* See Roemer, at the Aertzlicher Verein zu Hamburg, February 17th, 1914, 'Berl. klin. Woch.,' 1914, li, p. 669. The splenectomy was followed by immediate diminution of the jaundice and of the associated anæmia.

ASSOCIATED MOVEMENT OF THE JAW AND UPPER LID: "THE JAW-WINKING PHENOMENON."

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SINCE Marcus Gunn showed his case of associated movements of the jaw and upper lid before the Ophthalmological Society in 1883 more than seventy similar cases have been recorded. The great majority of these are congenital and fall into a fairly well-defined group. The phenomenon itself consists in the involuntary raising of the upper lid while performing some movement of the jaws, face, tongue, or pharynx. In a few cases, such as those of Fuchs, Just, Fraenkel, and Wilbrand and Saenger, this is the only defect present, but much more often it is accompanied by ptosis on the affected side. In sixty-three cases ptosis was present in fifty-two and absent in eleven. The anomaly is usually unilateral. In one case the movement has been bilateral, that of von Adamück, and in two others, though the movement has been confined to one side, there has been a defect of the upper lid on the opposite side. Rampoldi's bilateral case is so unusual in its features that it is doubtful if it falls into the group at all. The ptosis, when it occurs, may be very slight or may be complete; voluntary power over the lid may be perfect, but more often is only partial; in some cases the lid could only be raised with the head held back, in others with the sound eye covered, and sometimes there is no voluntary power whatever.

In addition to ptosis there are often other defects, the commonest being paralysis or paresis of the superior rectus muscle. Sinclair noted this in ten cases out of twenty-seven in which ptosis was present. Less often there is paralysis or paresis of one of the other ocular muscles, such as the rectus internus (Uthoff), the superior oblique (Lutz), or the inferior oblique (Cantonnet). In Thomson and Souter's case there was slight vertical squint and slight latent divergence. In Friedenwald's case there was crossed diplopia with vertical displacement, the image of the right eye, the affected side, being the higher.

In Vossius' case there was complete ophthalmoplegia externa of both sides, with jaw-winking on one side only; in Van Lint's there was intense nystagmus on lateral movement, especially on looking to the affected side. In some cases a difference in the size of the

pupils has been noticed; in Sinclair's, Müller-Kanberg's and Snell's cases it was smaller; and in Parsons' larger on the affected than on the unaffected side, but the pupils reacted to light. In Rampoldi's and von Adamück's cases there was some exophthalmos, a fact which led the latter observer to put forward a theory that the whole condition is due to a venous connection between the veins emptying from the orbit and the muscles of mastication. In Goldzieher's case when chewing became vigorous the lid went up, and in addition the eye itself rolled downwards and outwards and became a little proptosed. In many instances vision has been unimpaired, in others it has been diminished, and complete amblyopia has been met with on the side of the lesion. In Hubbel's case, for example, there was complete ptosis of the right eye with amblyopia, and in addition paralysis of the right superior and internal recti muscles.

In Snell's case the face was smaller, and the tarsal plate reduced in size on the side of the lesion. Facial paralysis was met with in another example.

Errors of refraction are common, and Hillemanns found a marked difference in the two eyes; in the right there was 1 D. hypermetropia, and in the left, the affected side, 2·5 D. myopia, but no ptosis and no diplopia. A coloboma of the optic nerve was also present, of which he gives a figure. The fundus oculi of all the other cases in which it has been examined has been normal in appearance.

From this account of the additional defects met with, it will be seen that the error of development is by no means a simple one, a point of some importance in view of the various explanations of the syndrome which have been given.

The movements, with which the jerking upwards of the eyelid is connected, have been analysed by Sinclair, who divided them into those with ptosis in which upward movement of the lid occurred with opening the mouth or on lateral movement of the jaw, and those in which it occurred only on lateral movement of the jaw, and those without ptosis, in which these movements were associated.

Pontico, however, who collected some forty cases in 1910, analysed them by the nerve supply of the muscles, with the movements of which the contraction of the levator palpebræ superioris was associated. He found that almost all were associated with those innervated by the motor branch of the fifth, or with movements in which muscles innervated by the sixth and seventh took part. In addition he found cases in which the innervation of the associated muscles was seventh, or the ninth and tenth. It has also occurred

with movements of the tongue, which draws its sole nerve supply from the twelfth or hypoglossal.

The commonest type met with is that in which there is some raising of the lid with ordinary mastication, and extreme raising of it, so as to show a large area of sclerotic above the cornea, with movement of the jaw laterally away from the side of the lesion, thus bringing the external pterygoid into action. If the jaw is held firmly in this position the lid often remains retracted. This is well shown in the photographs given by Snell, Sym, Thomson and Souter, Gauthier and Bucquet, and Lutz. Friedenwald describes a case, which is unique in that lifting of the lid only occurred with lateral movement of the jaw towards the affected side. In the three cases described by Lutz, almost all these associations are represented. In the first the lid was raised on opening the mouth, according to the author, in association with the activity of muscles innervated by the fifth and seventh cranial nerves, the second was similar except that the lid was also raised in association with swallowing, a movement performed by muscles innervated by the ninth and tenth nerve. In the third case it was only associated with the movements of certain muscles supplied by the seventh nerve, chiefly with the risorius and buccinator, and was most noticeable when the patient laughed.

My own case occurred in a baby first seen at six months of age. The infant is a girl, and the movements were first noticed when she was about a month old. It was seen that the right eyelid went up and down as the baby sucked at the breast. The baby is fat and healthy-looking, but there is a slight ptosis of the right upper lid, such that the lid falls as low as the level of the upper edge of the pupil. As far as one can tell in so young a baby, voluntary movement of the levator is good, and also of the other ocular muscles. The pupils are equal and react to light; there is no facial asymmetry, and no difference in size of the tarsal plates. As the baby sucks the right lid is raised synchronously with the movements of the jaw so that a little sclerotic is shown each time above the right cornea. As the jaw is moved away from the side of the lesion, as in grinding the teeth, the lid is raised. An almost imperceptible lateral movement is sufficient. The left lid is not moved, and the right eye itself remains stationary. Slight sucking movements produce no movement of the lid. When the baby yawns or laughs the lid is retracted to an extreme degree and shows a large extent of sclerotic. The movements are diminishing in frequency and in extent. There is no history of a similar condition or of ptosis in the family.

With regard to the etiology of the condition, both sexes appear equally liable. Of fifty-seven in which it is specified, twenty-nine were males and twenty-eight females, but there is a distinct preference for the left side. Twenty-one of these were right-sided and thirty-six left.

With regard to the course of the malady, the evidence is strong that it tends to disappear. In Blok's and von Adamück's cases, the latter acquired, it became worse, but in others it has been observed to diminish as life went on. In Gunn's case there was some recovery from the ptosis and less movement. In Thomson and Souter's the movements decreased, and this also happened in one of Fraenkel's and one of Kraus' cases; in the other case of Kraus, the movements lessened and finally disappeared under observation. That this is the usual course of events may be inferred from the age at which the condition is met with. Of 9 occurring at 5 years or under, two were under one year, between 6 and 10 there were 10 cases; between 1 and 20 there were 22; between 21 and 25, 6, and single cases were met with at 30, 34, 35, 38, 42, 43 and 55 years, the last being an acquired example.

The great number noticed in early adult life is, no doubt, due to the growing regard for personal appearance at that epoch.

It is probable that most cases obtain complete control over these involuntary movements and that in only very few do they persist throughout life.

The condition is evidently, to a certain extent, familial and hereditary, as one would expect, since it is probably merely a special form of congenital ptosis or ophthalmoplegia externa, both of which are, in certain instances, familial, and in others very strongly hereditary.

Vossius met with two brothers with ophthalmoplegia externa and double ptosis, in one of whom there was jaw-winking on one side; Blok met with it in two brothers, aged 17 and 10 years, who had in addition left-sided ptosis. In Fischer's case a boy had it with a right-sided ptosis, and his grandfather is said to have had precisely the same condition. Meyer noticed left-sided ptosis and jaw-winking in a father and daughter, and in Gunn's case the paternal grandfather and all his family are said to have had a slight asymmetry of the lids. Gunn only saw the father and aunt of his case, both of whom had merely a slight fulness of the upper lid on one side and no paresis.

The view of the pathology of the condition most commonly accepted is that originally put forward by the Committee of the

Ophthalmological Society which reported on Marcus Gunn's case. They were of opinion that the cells of that part of the third nerve which supplies the motor fibres to the levator palpebræ superioris were defective and that there was a direct innervation from the motor nucleus of the fifth. With some elaboration to cover recent cases, that is the view put forward by Pontico.

To explain all the facts observed, it is necessary to suppose that in some cases fibres run from the fifth, in others from the fifth and seventh, the seventh alone, or the fifth, seventh, ninth, tenth, and twelfth cranial nerves. But as Bishop Harman has pointed out, the nerve supply of a muscle is one of the most constant features of anatomy, and to find aberrant nerve fibres from nuclei belonging to the large-celled medial somatic group of nuclei such as the twelfth and from the small-celled efferent splanchnic group such as the ninth and tenth and also from the large-celled lateral somatic group such as the motor root of the fifth, all supplying a muscle usually innervated by cells of a nucleus belonging to the first-named group, would be too unlikely to make it a reasonable working hypothesis. Nor would this explain how recovery takes place, nor how the condition can be acquired in later life.

Bishop Harman's own explanation is that it is an atavistic phenomenon, the revival of an old and long-associated movement, which in normal man is suppressed by the exact balance of action existing between the orbicularis and the levator. He says that in the fish, when the mouth is opened the spiracle dilates, or in other words the superficial muscle of the branchial arch relaxes as the deep contracts. In man the superficial is now represented by the orbicularis and the deep by the pterygoids. The unilaterality of the condition he explains by supposing that a weak levator takes advantage of the relaxation of the more powerful orbicularis. One would, however, expect an atavistic phenomenon to be bilateral and in case of a difference in strength of the two levators, surely the stronger one should produce the greater contraction when released from its antagonist.

Others, amongst whom are Bull and Helfreich, suppose the condition to be due to an exaggeration of normal associated movements. This, I think, is a part of the truth, but not the whole. It does not explain the unilateral character of the lesion or its frequent co-existence with ptosis and other abnormalities.

I suggest that a more probable cause of the phenomenon is that there is in these cases a defect of the whole motor path for the movement of the upper lid, or at any rate of that part above the

nucleus of the third nerve. This condition is probably due to a defective or arrested development. It is clear that, if we reject Pontico's explanation, many of the nuclear cells must be intact even when ptosis and loss of voluntary movement are most complete, since raising of the lid can occur to its fullest extent in association with jaw movements. In congenital ptosis and in ophthalmoplegia externa, we know that the cells of the oculomotor nuclei are diminished in number, or absent, and Kann considers that there is also a defect of the tracts from the cortex in these cases. The frequency of ptosis and paralysis of ocular muscles in connection with the jaw-winking phenomenon, suggests that it is connected with these conditions, and this receives strong confirmation from the case reported by Vossius. He met with two brothers, aged 21 and 18, who had double ptosis and complete ophthalmoplegia externa, and in addition the younger had associated movements of the upper lid and jaw on one side only. The essential part of the lesion, therefore, is probably one of incomplete development of motor and inhibitory fibres from the motor cortex to the nucleus of the third nerve, or that part of it which supplies the levator palpebræ superioris, whereas in the commoner cases of congenital ptosis the defect is one chiefly affecting the nucleus itself or the parts below the nucleus.

A defect of this nature would explain the co-existence of complete ptosis and intact nuclear cells.

It is necessary now to explain how the paradoxical contraction of the levator occurs.

It is well known that in some cases, especially in babies and children, the eyelids are raised while sucking or masticating food, or while yawning. This proves that normally there is a path of association between the higher centres controlling these two movements. This is confirmed by the fact that when children suffering from photophobia open their eyes the mouth is frequently opened also.

A pathological example of this last associated movement is afforded by a case reported by Beaumont. A child, aged two-and-a-half, with complete double ptosis, used to open her mouth whenever she tried to raise her lids. The ptosis was cured by operation, and the associated movement ceased.

If we suppose that voluntary control of the levator palpebræ superioris is largely or completely lost, it is easy to understand that impulses passing along this track between the centres for eye movement and those for jaw movement would have free play, and that the lid might be raised with each movement of the jaw. The more

this path became used the more certainly would the paradoxical movement of the eyelid take place.

If careful observation were made in a large number of children, we should probably meet with cases in which slight raising of the lid occurred with swallowing, or protruding the tongue, and there is probably an association between the centres for these movements and that for raising the lids, similar to that between the centres for jaw movements and lid movements. With age it is not unreasonable to suppose that less direct tracts for impulses may be opened up and used, and that voluntary control over the lid may be obtained, or at any rate sufficient control, to make it possible to inhibit the raising of the lid. This view of the pathology of the condition offers an explanation for the movement being usually unilateral, for its presence with or without ptosis, and for its disappearance.

Sydney Stephenson describes a case unique up to the present. This was a boy, who had left ptosis, but the lid movement occurred on the opposite side, the right, with chewing, and on lateral movement of the jaw. The case must be regarded as a bilateral one, in which the defect of the development fell more on the motor track from the cortex to the nucleus, or on the nucleus itself, on the left, and on the inhibitory fibres from the cortex on the right side. It is worth noting that this child had a remarkable physiognomy, and a deep depression of the skull behind the frontal bone, facts which seem to point to more than a small local error of development.

It also offers a reason for the improvement in the ptosis seen in two cases. It will also explain those rare cases in which the phenomenon has been acquired.

They are doubtless due to the same condition, which must have been present at birth, a view strengthened by the presence of congenital ptosis in those of Blok and others.

We must suppose that in these the association fibres between the higher centres for jaw movement and lid movement were not used at first. Probably some powerful cause operated to make the first impulse pass along, and once opened up the path became used with regularity, the path for inhibitory impulses being weak or absent.

In Gauthier and Bucquet's case the associated movements definitely began with the removal of a tooth, and continued afterwards with increasing regularity. In the others no definite cause for the commencement of the associated movements has been recorded, but there was probably some unusual stimulus, which made plain the latent defect of development.

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Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, April the 24th, 1914.

The President, DR. LEONARD GUTHRIE, in the Chair.

Amyotonia Congenita.—Dr. H. MORLEY FLETCHER showed a boy, aged 3 years, with this condition.

Arthritis of the Left Shoulder-joint following Pulmonary Diseases.—Mr. A. E. MORTIMER WOOLF. A boy, aged 8 years, was treated for fibroid disease of the lung of tuberculous origin from April, 1911, to June, 1913. He then developed pain in the left shoulder-joint with limitation of movement and slight wasting of the deltoid. A skiagram of the thorax showed shadows suggestive of lung disease and calcareous glands, and a skiagram of the shoulder showed caries of the head of the humerus. Complete recovery followed the application of a splint and the administration of tuberculin.

Case of Mongolian Blue Spots.—Dr. E. A. Cockayne showed a child, aged 11 months, whose parents were Jews. The spots were first seen at the age of 9 weeks. They were of a slaty-blue colour, and unaltered by pressure. There were three very large ones on the lower part of the back and on the left flank, two on the right shoulder, and one just below the left deltoid.

Cubitus Varus following Fracture of Lower End of Humerus.—Mr. PHILIP TURNER showed a girl, aged 13 years, with this condition, which was treated by osteotomy of the humerus above the condyles, followed at the end of two weeks by massage and passive movements. The deformity was cured and there was great improvement in the function of the arm.

Syphilitic Cirrhosis of the Liver; Ascites; Talma-Morison Operation; Arthritis of the Knee.—Mr. PHILIP TURNER.—The patient was a boy, aged 7 years. The operation was followed by a considerable collection of fluid in the peritoneal cavity, requiring paracentesis, but the fluid had not re-collected and the general condition had considerably improved.

Pneumonia and Encephalitis Cerebelli.—Dr. LEONARD GUTHRIE.—A boy, aged 2½ years, was admitted to hospital for convulsions and left

basic pneumonia. One severe and several minor attacks of generalised convulsions occurred after admission, and then the fits ceased, but the child remained in an irritable semi-conscious condition for over a fortnight. The cerebro-spinal fluid showed some hypertension, but was clear and sterile, and had no excess of albumin or cells. The pneumonia gradually cleared up and the intelligence improved. Signs of cerebellar incompetence then appeared. There were inability to stand or maintain equilibrium when sitting, general weakness and hypo-tonous of muscles of limbs, marked intention tremors, and ataxy on voluntary movement, especially of the right upper extremity. Gradual improvement occurred, but the child still cannot stand without support and is unable to speak.

Case of Enlargement of the Spleen.—Dr. R. A. CHISHOLM and Dr. E. BELLINGHAM SMITH showed a boy, aged 2 years, with an enlarged liver and spleen, and positive Wassermann's reaction. The question was whether it was a case of splenic enlargement with cirrhotic changes in the liver requiring splenectomy, or a case of splenomegaly due to congenital syphilis.

Partial Paralysis of the Abdominal Muscles due to Infantile Paralysis.—Dr. E. BELLINGHAM SMITH showed a boy, aged 7 years, with a distinct ballooning of the whole of the upper third of the abdominal wall, apparently due to a bilateral symmetrical paresis of the muscles in this area.

The reflexes over the upper one-third of the abdomen were absent, but were present in the lower two-thirds. The chest moved very little during expiration and inspiration, and there was evident inter-costal paralysis. There was also paralysis of the left deltoid.

Benzol in the Treatment of Lymphatic Leucæmia.—Dr. J. N. MACBEAN ROSS.—The case had been previously only shown to the section (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, January, 1914, xi, p. 173). During the treatment there was a progressive diminution in the total leucocyte count, and the patient seemed to be greatly improved generally, though the spleen remained enlarged and the glandular enlargement did not become less. After the benzol was stopped on February the 12th, the leucocyte count was taken weekly, and at one time was as low as 2900. On April the 2nd he was re-admitted to hospital. The lymphatic glands were distinctly harder and larger, the general condition was worse, and the total leucocyte count had risen to 123,000. Benzol, *m v per diem* was given, and in ten days the count had fallen to 15,000 and there was general improvement in his condition.

Bilateral Hare-lip without Cleft Palate, and also Congenital Bilateral Mucous Fistulæ in the Lower Lip.—Mr. ALAN H. TODD showed a male infant, aged 3 months, with this condition. The upper lip showed a wide bilateral cleft, with marked projection of the premaxilla, but there was no cleft palate. The lower lip showed two small depressions, each $\frac{1}{8}$ in. from the mid-line.

The following papers were read: **Auricular Flutter in Acute Carditis**—Dr. G. A. SUTHERLAND (*vide* page 337).

Case of Acute Partial Heart Block.—Dr. A. HOPE GOSSE.—A boy who had frequently suffered from sore throat was admitted to hospital

with rheumatic pericarditis at the age of ten years. Next year he was in hospital again with acute rheumatism for two months, and two months later he was admitted again for increasing præcordial pain. The jugular tracings showed that he had a normal "a-c" interval on admission. This interval increased to over one-fifth of a second in about a fortnight, and three weeks after admission the dropped beats occurred, associated with an "a-c" interval of two-fifths of a second. The dropped beats occurred on two consecutive days, and then the "a-c" interval gradually diminished.

On one of the days of the dropped beats he had an attack of most severe præcordial pain, during which he became cyanosed, had distress in breathing, and a small pulse.

Philadelphia Pediatric Society.

May the 5th, 1914, WILLIAM N. BRADLEY, M.D., President.

SPECIAL PUBLIC MEETING UPON THE VALUE OF ANIMAL EXPERIMENTATION IN THE DISEASES OF CHILDREN.

The Value of Animal Experimentation in the Diagnosis of Disease in Children.—Dr. ALFRED HAND, jun., read this paper. He emphasised the importance of diagnosis, for without exact diagnosis, treatment could not be scientific. With the development of bacteriology and the discovery that germs were associated with infectious diseases, a need arose for standards to determine the true relations between them, and Koch formulated certain postulates. These had been fulfilled in about half of the infectious diseases, yet much work remained to be done. The Widal test in typhoid fever, discovered through animal experimentation, was of great value; in the small group of cases in which it might be negative, bacilli could be isolated from the blood or discharges and identified by agglutinins obtained from animals. The diagnosis of meningitis depended on lumbar puncture; in the tuberculous form it might be necessary to inject fluid into guinea-pigs. This test was also used for enlarged glands in the neck, pleurisy with effusion, kidney conditions, and in the study of milk to determine the presence of tubercle bacilli. Much of our knowledge of tuberculosis resulted from animal experimentation, even the von Pirquet cutaneous tuberculin test. If specific treatment were ever obtained, it would be through animal experimentation. So important was the study of throat cultures in the diagnosis of diphtheria that municipal and state governments furnished facilities for this; and at times culture tests were made upon guinea-pigs to test the virulence. Dr. Hand described two cases of rabies, in which the diagnosis was established by autopsy and experiments upon rabbits. Syphilis had a high mortality in children, and accurate diagnosis was of great importance. The Wassermann test, recently discovered, placed the diagnosis on an exact scientific basis, and used a lower animal. The claim made by anti-vivisectionists that animal experimentation accomplished nothing had been shown to be false; now they opposed vivisection upon so-called morality. For the sustenance of the body, it was necessary to consume some of the lower animals, and for the health of the body some of the lower animals were needed to furnish us with defences against sickness; was there any difference between these?

Société de Pédiatrie, Paris.

April the 7th, 1914. (Bulletin No. 4.)

Infantile Hemiplegia in a Congenital Syphilitic.—MM. BABONEIX and TIXIER reported the case of a boy, aged $3\frac{1}{2}$ years, who had an ordinary infantile hemiplegia with arrest of development of the left side, athetoso-choreic movements, exaggerated reflexes, and slight mental derangement. Wassermann's reaction was positive in the child, but negative in the mother. The father, who was dead, had received mercurial treatment while in the army.

Acquired Dextrocardia and Infantilism of Tubercular Origin.—M. VARIOT and MME. CHATELIN showed a boy, aged 15 years, with this condition. The dextrocardia was obviously acquired; the presence of the liver on the right side and the absence of inversion of the viscera eliminated a congenital condition and the normal direction of the heart's axis supported this view.

The Diagnosis of Anencephaly by the Transparency of the Skull.—M. CHATELIN showed two children with spastic rigidity of cerebral origin, one with obvious hydrocephalus, the other without any appreciable modification of the skull. Both were diagnosed as anencephalic. The method was simple; all that was necessary was to place the child's head before a sufficiently powerful electric light so that the cranial cavity was illuminated to its whole extent.

Two Cases of Hypoalimentation successfully treated by Hyper-saccharated Milk.—MM. VARIOT and GRANDJEAN. Both cases showed a condition similar to true athrepsia. There was no diarrhoea but a spurious constipation, with vomiting and gastric dilatation. All the symptoms disappeared on giving a sufficient ration. The speakers gave one-fifth of the body-weight and drew attention to the dissociation between the increase in weight and height. One case was 58 cm. high for 3 kilogs weight and had only gained 1 cm. in a month, while he increased 1100 grams, a height of 58 cm. corresponding to about 5 kilogs weight. The other case, on the contrary, was only 53 cm. high, scarcely the height of a child a month old. As soon as he reached the weight of a child this age the height increased rapidly like the weight, and the child gained 3.5 cm. in a month and a half.

Gonococcal Ophthalmia cured by Nicolle's Vaccine.—MM. CASSOUTE and ROCHE related a case in which a severe purulent conjunctivitis was cured in forty-eight hours by this method.

Separation of the Epiphysis before the appearance of centres of Ossification.—M. LANCE showed two cases, aged 18 months and 12 years, with this condition of the wrist and elbow respectively. The only cutaneous signs were those of a movable fragment and crepitation. These lesions caused very little disturbance, there were no ecchymosis, little swelling and partial movement.

A New Spiroscope.—M. LANCE.

Infantile Scurvy in a child of 4 years brought up on Homogenised Milk.—MM. SCHREIDER and FRANÇOIS related this case of Barlow's disease which is very rare after two years of age, as children's food is more varied than that of nurslings. Lepelletier milk had been used since birth.

Noguchi's Luetin Reaction in Infantile Syphilis.—MM. BLECHMANN and DELORT read a preliminary note on this subject. A positive reaction may occur in three ways: (1) after twenty-four hours a red papule is observed, which becomes rapidly hard; in about three to five days a pustule is formed, which either dries up quickly or increases and becomes covered with a necrotic scab; (2) the reaction may stop at the papular stage. Whilst in the preceding case the reaction matures in twelve to twenty days, in the second case it is very variable; it may disappear in a week without leaving any trace or persist as an appreciable induration for over a month; (3) the speakers had not actually observed in children an example of the so-called "torpid" reaction described by Noguchi which only occurs after an interval of fifteen or twenty days.

Lengthening of the Lower Limb in Tuberculosis of the Knee.—MM. SAVARIAUD and RÆDERER described three cases of white swelling of the knee of a benign type, little marked, and never suppurating. They had been treated by immobilisation. One had had an injection of chloride of zinc, the other injections of thymol and gomenol and the third no injection.

▮ **Demonstration of Pantograph.**—M. COURTADE showed an instrument of this name for measuring the thorax. VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Some observations on infant feeding (*Arch. of Pediat.*, 1913, xxx, p. 762).—H. RULISON advocates dilution of whole milk with water, to which is added from one to three carbohydrates, including one form of sugar. The energy quotient of 100 calories per kilo of body weight, diminishing to about 70 at the end of the first year, has worked well. Feeds should be administered once every four hours, as cow's milk mixtures seldom leave the stomach in less than two and a half to three hours. Higher percentages of proteid are advocated. The author begins with 1.33 to 2 per cent., and increases up to 3 or 4 per cent. by the end of the first year. Maltose is the most assimilable and the least fermentable of the carbohydrates, but it has a laxative effect, and many infants tire of it and lose their appetite. Good results are also obtained with cane sugar. Hass has recently demonstrated the presence of amylase during the early weeks of life, and Brady has recently advocated polycarbohydrate feeding. In diarrhoea sugar and barley water should be withdrawn. With regard to fats, many infants cannot properly metabolize even moderate percentages. The author finds that fat in a mixture will more often need reduction than increase after 2 per cent. has been reached.

CHRISTOPHER ROLLESTON.

Some physiological principles concerned in the nutrition of infants (*'Practitioner,'* 1914, xcii, p. 41).—**E. Pritchard** says that the resolution of foreign proteins into their component elements, or amino acids is of great importance in infancy, for unless foreign proteins can be so resolved in the process of digestion, they cannot be utilised for compounding the specific proteins which are essential for the child's nutrition. It is dangerous to supply the new-born infant with any variety of foreign proteid, unless the digestive functions are established. A great number of the troubles of the digestion and nutrition in infants and children are due to the improper administration of cow's milk before the gastric and pancreatic functions have been developed.
F. R. B. ATKINSON.

Nutritional disorders in infancy (*'Medical Press,'* 1913, II, p. 550).—**Eric Pritchard**, in a clinical lecture, discusses what should be implied in such a term as "good nutrition." He adduces relative over-feeding as the cause of most of the troubles of infancy, and regards it as the main ætiological factor in the production of rickets. He pays some attention to the difficulties of deciding on the exact amount of milk necessary to an infant in varying circumstances.
REGINALD MILLER.

Infant feeding and the examination of stools (*'Arch of Ped.,'* 1913, xxx, p. 244).—**F. B. Talbot** considers that in cases of indigestion in infants an examination of the stools will show what component of the dietary is at fault. In fat indigestion the stools show soft curds, while the fæces may become soapy or even oily. In carbohydrate indigestion the stools are acid and scalding, may be feathery or bubbly, while the starch in them will turn blue with Gram's stain. In protein indigestion tough curds are found in the stools.
REGINALD MILLER.

On avoidable difficulties in the hand-feeding of infants (*'Brit. Med. Journ.,'* 1913, I, p. 1263).—**Eustace Smith** maintains that many gastro-intestinal disorders in infants originate in a chill, the result of undue exposure. He formulates three simple rules for the hand-feeding of infants: (1) Take care that the infant is bathed as quickly as possible in hot water, and that his feet and legs are never allowed to get cold. (2) See that a sufficient variety of flavour is contained in the several meals. (3) See that the feeding apparatus is absolutely clean, the food fresh, and the sanitary arrangements generally in good order.
J. ALLAN.

Normal weaning (*'Journ. de Méd. de Paris,'* 1913, xxxiii, p. 1015).—**A. Moussous** and **E. Leuret**.—Weaning should be a gradual process to make sure that the new foods are well tolerated by the infant. It should terminate between the twelfth and fifteenth month in the case of a healthy infant with a good nurse, and should begin between the eighth and ninth month. It should, if possible, not be commenced during the hot months. The proportions of food should be: water, 65; albumen, 23; fats, 7; salts, 5. The amount of albumin equivalent to a quarter of the daily increase of weight of the child should be given, as without this new tissues cannot be formed. The ration should contain the energy necessary for the work of the body and for the maintenance of the body heat. The amount of albumen should be 1.36 per kilo of body weight at seven months, and 1.16 at twelve months. The first feeds should be of 100 grms. of milk with 5 grms. of powder of Indian corn or barley, and 5 grms. of sugar.

this gives about 120 calories, if this is not well borne, rice or arrowroot may be substituted, after a fortnight this may be given twice daily instead of breast feeding. Next it should be thickened with further farinaceous additions, and by the tenth or eleventh month another 50 grms. of milk may be added; and the starchy food may be varied and bread panada given, also rusks, biscuits and crusts of bread. By twelve months of age the breast-feeding may be entirely given up and feeds of 200 grms. of milk with 20 grms. of farinaceous food given. Then eggs, potato *purée* and bread and butter may be tried. Each time a further addition is made to the diet care should be taken that the digestion is properly carried out.

J. PORTER PARKINSON.

Intolerance of breast-feeding in an infant (*Jour de Méd. de Bordeaux*, 1913, LXXXIV, p. 645).—**Lefour** and **Balard** give the details of the breast-feeding of an infant under close observation, where there was a lack of improvement and vomiting with this feeding. Other cases are also mentioned in the discussion following the paper. REGINALD MILLER.

Unusual type of acid intoxication in infants (*Am. Journ. Med. Sci.*, 1914, CXLVII, p. 86).—**I. A. Abt** describes a series of cases of acid intoxication occurring in previously robust infants at about the end of the period of breast-feeding. Usually a fatal termination ensued in about five days. In one family two children had died in this way and a third suffered but recovered. The author differentiates his cases from cyclic vomiting owing to the vomiting being much less severe and persistent than in typical examples of that malady. REGINALD MILLER.

The modification of cow's milk for infant feeding (*Med. Press*, 1913, II, p. 196).—**D. M. Barcroft** states that in his experience the successful treatment of infantile indigestion demands a most careful modification of the casein content of the milk, and this is best accomplished by means of lactalbumin. The method is the only physiological one, because it has been shown that the digestibility of the casein of human milk is due to the influence exerted on it by the large amount of lactalbumin it contains. This accounts for the softness and flocculence of the casein curds yielded by cow's milk to which lactalbumin is added. J. ALLAN.

The preparation of albumin milk (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1810).—**J. M. Brady** gives the following directions for preparing albumin milk: Bring a quart of sweet whole milk to the boiling point; raw milk is not used, as its curd is much tougher. Cool to 100° F. Add one table-spoonful essence of pepsin and allow to curdle. Pour off the whey and suspend curds in muslin bag two hours. Stand bag containing curds in 8 oz. boiled cool water for one hour. This is very important and is the secret of success. Remove the bag from the water, allow as much water to drip as will, and place curds in sieve. Add pint of fat-free buttermilk to sieve containing curds and stir; it will be found that the curds will pass through in two to three minutes. This must be repeated three or four times. Turn the bag inside out and return to the 8 oz. of water so as to obtain all the curds. Pour in the sieve the 8 oz. of water which was used to soak the curds. Add enough water so that the whole measures a quart. Add the percentage of maltose-dextrine desired and put on ice.

T. R. WHIPHAM.

Dried milk in infant feeding (*'Echo Méd. du Nord,'* 1913, xvii, p. 365).—**Deléarde** says that the use of dried milk dates from Newton's time. It is prepared by subjecting the fluid to a temperature of about 100° C. A yellowish-white powder results which can be preserved for many months if kept from damp. It is sold in three varieties according to the condition of the milk as regards cream: (a) all cream removed; (b) half the cream removed; (c) whole milk. The important constituents are not markedly altered, but if carelessly prepared the lactose may be converted to caramel, and in any case the various ferments are destroyed. If the milk be sour a good powder is not produced. The acidity of the milk should never be neutralised by the addition of sodium bicarbonate. This method of administering milk is very useful in cases of marasmus and diarrhoea, and cases of gastric vomiting can be kept under control by giving the powder in the form of a paste and a sufficiency of water subcutaneously. In acute gastritis after the administration of dried milk the temperature drops and the stools become normal. Its other advantages are summarised as follows: (1) Limitation of the amount of fluid ingested, and consequently no distension of the gut or fetid stools. (2) Destruction of pathogenic germs and impossibility of any that may be present developing owing to lack of water. (3) Economy: a baby of six weeks old, can be fed for twopence a day. (4) Ease of distribution: Enough can be given to a family to last a week, thus saving the labour and expense of the ordinary milk depôt. To infants a day old, half a teaspoonful of no cream powder and 10 grms. of water are given in each of seven bottles, the amount of water is increased daily by 5 grms. until forty are taken. From the eighth to fifteenth day, one teaspoonful of powder is used, then two, and by the end of the first month one teaspoonful of skim and one of half cream powder are added to each bottle. The latter is increased by two tablespoonfuls a month. A teaspoonful of sugar is added to each bottle. Whole milk powder is given at six months.

CHRISTOPHER ROLLESTON.

Dried milk in the nutrition of the normal and ailing infant (*'Arch. de méd. des enf.,'* 1913, xvi, p. 401).—**Bonnamour** insists on the necessity of commencing with a milk powder from which all the cream has been removed, and as the gastro-intestinal disturbance diminishes gradually restoring the cream. In only five cases in seven years has he met with failure. These were cases of obstinate vomiting. In two the vomiting ceased when wet nursing started. In another there was spasm of the pylorus. The others were perhaps due to maternal incompetence. Only three deaths occurred, one from meningitis, one from pneumonia, and the other from a dental abscess presumably setting up a septicæmia. In no case was any gastro-intestinal disturbance started. Each feed must be prepared separately; almost boiling water must be used. Up to six months half the cream is removed from the milk; afterwards whole milk is used. The following amounts of dried milk and water are recommended for each feed: During the first two weeks, one soup spoonful of powder to three of water; at the end of two months, two of powder and six of water; at the end of four months, three of powder and eight or nine of water; at the age of a year, four spoonfuls of powder to ten or twelve of water. A litre of milk contains 125 grm. of powder, and a soup spoonful contains 5·5 grm. A litre of milk therefore contains 32·7 spoonfuls, as a litre of milk weighs 1030 grm. Each spoonful will contain 45 grm. of milk. During the first fortnight the infant receives 315 grm. of milk a day; at the end of the

second month 630 grm.; at six months 945 grm.; and at twelve months 945 grm. CHRISTOPHER ROLLESTON.

The comparative value of various sugars in infant feeding (*'Arch. of Ped.,'* 1913, xxx, p. 572).—**C. Haskell** refers here only to sick infants. A number of infants were fed on various sugars, and the proportion gaining weight, showing a general improvement and an improvement in the condition of the stools was noted. The groups of cases were six, which were given lactose, saccharose, 80 per cent. maltose, maltose, dextri-maltose, and malt soup extract, respectively. A comparison of these groups led the author to a conclusion in favour of the malt soup extract. REGINALD MILLER.

The effects of hypersaccharated milk (*'La Clin. infant.,'* 1913, xi, p. 725).—**MM. Variot and Lavialle** have continued their study of sweetened condensed milk and communicated the results to the Académie des Sciences November 24. They inquired whether the antiemetic properties of such milk were due (1) to some chemical modification brought about by the condensation itself, (2) to a combination of the added with one of the normal constituents of the milk especially with the casein, and (3) to the free cane-sugar contained in the milk. They found (1) that the sugar did not enter into any combination with the casein, but remained free, even after over-heating, (2) that the casein molecule was not split up more in the presence of sugar than without it, (3) that the modification of the casein was due to the over-heating only, (4) that the antiemetic and eupeptic properties of such milk were exclusively due to the presence of sugar and to the mode of preparation, (5) that the special properties of sweetened condensed milk were due simply to the over-sweetening; by adding to homogenised milk saccharose in the same quantity as that contained in condensed milk, viz. 10 per cent., the results furnished by this sweetened non-condensed milk heated to 108° C. were exactly the same as those obtained by condensed milk, *i. e.* arrest of vomiting, regularisation of the gastro-intestinal functions and rapid increase of weight and height. VINCENT DICKINSON.

Indications and contra-indications for the use of fermented milk in diseases of children (*'La Pédiatrie,'* 1913, xxi, pp. 291 and 413).—**G. Cacace** gives an exhaustive article on this subject having experimented with all kinds of fermented milk. Their greatest use is in digestive disorders owing to the antagonism between the lactic bacteria and those of the intestinal flora. They are also indicated for their nutritive value in constitutional affections and general disturbances of nutrition, as in certain dermatoses, especially in those dependent on intestinal intoxication. Contra-indications are few and limited to those cases in which lactic acid, alcohol, and carbon dioxide are contra-indicated. Fermented milk, although having a definite nutritive value, cannot be administered continuously to infants and therefore cannot be considered as a true substitute for ordinary milk. The quantity of fermentation products, according to the author's chemical analysis, increases in kephir and koumiss in direct proportion to the duration of the fermentation. The most beneficial and constant therapeutic action in intestinal affections of children is to be found in strong kephir.

VINCENT DICKINSON.

"Whey modified milk" in infant feeding (*'Arch. of Ped.,'* 1914, xxxi, p. 20).—**J. S. Leopold** reports his experiences of the use of Schloss's "whey

modified milk," the formulas for which were published in 1912. The chief point in the dietary is the attention paid to the percentage of salts in the mixture. Leopold obtained good results in the feeding of a series of institutional infants under the age of six months; but in those over this age he found that better progress was made on a simple milk mixture.

REGINALD MILLER.

Contribution to the chemical investigation of the casein of cow's milk (*La Clin. infant.*, 1913, xi, p. 518).—MM. Lavalie and Longevialle examining the chemistry of casein in its three states, namely, in suspension, colloidal state, and in solution, find that under the influence of heat in the presence of water, it undergoes important and marked changes. Scalding to 108°–110° C. has peculiarly powerful action, diminution of levo-rotatory power, and tendency for the albuminoid molecule to disintegrate. These changes are not affected by the presence of sugar. The authors could not obtain any combination between the sugar and the casein. The action of heat on casein simply dissolved in sweetened or unsweetened water increased its levo-rotatory power, but when dissolved by means of sodium or ammonium carbonate it was diminished.

VINCENT DICKINSON.

Why sodium citrate prevents curdling of milk by rennin (*Amer. Journ. Dis. Child.*, 1914, vii, p. 298).—A. Bosworth and L. Van Slyke state that casein is a protein combining with metals or bases to form caseinates. It exists in milk in combination with calcium, probably as tetra- or tri-calcium caseinate. Rennin converts calcium caseinate into calcium para-caseinate, a less soluble substance, which is precipitated, or in other words the milk curdles. If, however, excess of a soluble sodium salt, *e. g.* citrate, be added the insoluble calcium para-caseinate is converted into soluble sodium para-caseinate, and calcium citrate in excess is found in the filtrate. The larger the amount of sodium citrate added, the larger was the amount of soluble calcium found in the filtrate; the longer did the milk take to curdle, and the softer did the curd become, until with 0.520 grms. of sodium citrate no clot was formed.

CHRISTOPHER ROLLESTON.

Injuries produced by starch (*Journ. Amer. Med. Assoc.*, 1913, lxi, p. 1275).—I. A. Abt states that the condition known to the Germans as "mehlnährschaden," or starch injuries, seems to be little known in America. Czerny and Keller point out that starch in proper dosage is not injurious to the infant's organism. It has been suggested that nitrogen is better retained if small quantities of starch are added to the food. If it be given in excessive quantities for an extended period of time, particularly if it be used without the addition of milk, it may lead to disastrous results. The condition arises in young infants who are fed with starch preparations without the addition of milk. More frequently it is seen in infants who have suffered from a gastro-intestinal disturbance and for whom the physician has ordered a starch water, either barley or rice, or oatmeal, and when this has been continued without the addition of milk, usually without the knowledge of the physician, for a long period. The pathological condition which results from overfeeding of starch is due probably to an actual food deprivation measured in calories. The starvation is particularly due to the insufficiency of protein, fat, and salts in the diet. The salts contained in the starch food, as well as the starch itself, tend at times to combine with water in the tissues, leading to water retention. This causes the infant to

appear plump, though pasty and pale. In the meantime, the normal production of antibodies in the organism is diminished and the resistance of the infant against infection is lowered, and secondary infections are likely to occur. Dyspeptic conditions with diarrhoea and loss in weight result. If the condition of inanition continues for some time, fermentation and inflammation and loss of function of the alimentary tract are inevitable. The disease presents itself in three main types. (1) In cases in which there is a deficiency of salt without retention of water, complicated by diarrhoea, the atrophic type presents. The muscles are hypertonic, the tissues dry, the skin and mucous surfaces are pale and the abdomen is distended. (2) The hydræmic type occurs most frequently in cases in which salt is added to the starch preparations, or in which a small quantity of milk is used in the food. These children remain stationary or increase in weight; sometimes the increase is enormous. If considerable milk is added to the diet at this point, the infants lose rapidly in weight. If the starch diet is resumed an increase in weight occurs. Gradually they present an œdematous, pasty appearance, due in part to retention of water, and in part to accumulation of subcutaneous fat. The musculature is doughy on palpation; the abdominal wall and lower limbs become œdematous, not due to nephritis, but to a condition of simple hydræmia. Owing to the diminution of the natural immunity the infant is predisposed to infections, such as bronchopneumonia, pharyngitis, otitis, abscesses and phlegmons. Czerny mentions that xerosis of the conjunctiva and cornea with sequelæ are not infrequent and the condition usually indicates a fatal termination. (3) The hypertonic form is the most infrequent type. The muscles become rigidly contracted and are stiff and board-like. On account of this condition the spine is like a rigid tube, the occiput is bent backward and is bored deeply into the pillow, the arms and legs are adducted, the forearms are flexed at the elbow and the joints offer resistance to passive motion. In the severe types rigidity is so marked that the patient appears like one in catalepsy. Galvanic excitability with pronounced symptoms of tetany may be elicited. The bowel movements are usually yellowish-brown and formed, and frequently show starch with the iodine test. In the severe cases in which fermentation has occurred the stools may become thin with a penetrating sour odour. The dangers resulting from starch injury are most frequent in young infants. Starch can be digested by young babies, but only in small quantity. The greatest danger exists on account of the loss of the natural immunity and lowered resistance, rendering infections more possible. The atrophic form seems most amenable to treatment and offers the best prognosis. The treatment consists in the administration of milk containing a moderate quantity of fat. Carbohydrate food, such as buttermilk mixtures, malt soup, and cereal decoctions should be avoided. Best of all is breast-milk. Even with the use of breast-milk one should consider the damaged tolerance of the organism and small quantities frequently repeated should be administered: first, 2 oz., 6 oz., 10 oz. per day increasing gradually. Even with the use of breast-milk the cure will not be rapid. There may at first be loss of weight. The period of repair may be protracted, the damaged normal immunity may be slow to return and the use of the breast-milk should be persisted in for a considerable period, at least until the patient shows increase in weight. If breast-milk is not available, it has been suggested to use small quantities of undiluted cow's milk, 1 to 2 oz. per day, gradually increasing to 3 oz. and eventually to 6 oz.; finally by gradual increase to 10 or 12 oz. The deficient quantity of water in the food may be

counterbalanced by giving tea or water sweetened with saccharine. Or the milk may be used diluted with water, small quantities being frequently repeated. In some cases top-milk mixtures might be indicated, though the infant's tolerance for fat should not be exceeded. The author gives two illustrative cases from his own practice. T. R. WHIPHAM.

The public and professional confidence in certified milk (*'Arch. of Pediat.'* 1913, xxx, p. 774).—**M. J. Synnott** states that the first certified milk dairy was established by Mr. Henry J. Coit, in 1892, and since then nearly 100 have been established. The cows should be tested at regular intervals by tuberculin, and bacteriological examinations of the milk should be of frequent occurrence. The employees should be vaccinated against smallpox and typhoid fever, and carriers of the latter and of venereal diseases should be excluded. Ample bathing facilities, the use of which should be compulsory, and well-ventilated sleeping rooms should be provided.

CHRISTOPHER ROLLESTON.

Alimentation of the infant (*'Ann. de Med. et. Chir. inf.'* 1914, xviii, p. 343).—**Nobécourt** and **Darré** give the composition of goats' milk as butter 48, lactose 47, casein and albumens 37, salts 8, but the composition varies much, the milk of the Malta goat being richer in fats than that of the goat of the Alps. It is said that the goat is rarely tubercular; that is true when it is kept in the open, but in a stable it may contract tubercle from the cow. The milk should be boiled. The composition of asses' milk is nearer that of human milk, and is as follows: Lactose 63, butter 11, casein 19, salts 4.58. The fat being deficient, and so its alimentary value being only a third of human milk, asses' milk is only useful in the first few days of life, or in certain diseases. It is very expensive. Comparing natural with artificial food, all indications are in favour of natural food: the general condition, the normal appearance of the stools, the increase of weight and absence of dyspeptic troubles.

J. PORTER PARKINSON.

The fæces of the infant (*'Journ. de Méd. de Paris,'* 1914, xxxiv, p. 367).—**Nobécourt** divides the stools occurring in gastro-intestinal disease into those formed of the residues of food, those not containing food residue, and mixed stools. (1) Stools formed of food residues. Badly digested stools may be of variable colour, golden, yellow ochre, grey or white. The consistence is not uniform and the odour is strong, sour or foetid. Diarrhoeic stools are more or less liquid and mixed with gas; the colour is often green and the odour acid or ammoniacal or fishy. Constipated stools may be small, dry and friable, or large and pasty; often covered with mucus. The colour varies. The stools may contain muscle fibres, *débris* of potatoes, or bread, or vegetables and fruits; there are often curds and flakes of mucus. (2) Stools without food residues. These may be serous and consist of a green or yellow liquid with mucus, or colourless with grains like rice, or they may be glairy with mucus containing blood. (3) The mixed stools have residues of food, blood and mucus. The normal stools of an infant at the breast are slightly acid, but a bottle-fed child has alkaline stools; in gastro-intestinal disease the stools vary, green stools being generally acid and the others variable. Normal stools give a negative biuret reaction, but in digestive troubles the reaction may be positive from albuminose and peptones. Blood may be only discernible by the phenol-

phthalein test. Fehling's reaction for sugar should be negative. Microscopically no cells should be seen, but there may be fat globules and fatty acid crystals in small amount, which are increased in disease. Large flakes consist of a nucleus of nucleo-albumin or casein surrounded by fat. Starch should not appear in the stools. Stools containing much carbohydrate are brown, soft and spongy from gas, they are acid and rapidly putrify; this appearance is characteristic. Casein stools are pale yellow or grey, not foetid and alkaline, or may smell like fermented cheese; they contain much fat.

J. PORTER PARKINSON.

The reaction of the normal infants' stools (*'Le Nourrisson,'* 1914, II, p. 65).—E. Weill and A. Dufourt find that the stools of a healthy infant have a tendency to be habitually alkaline, but they may become acid or neutral without any definite cause. Among twenty children suffering from alimentary dyspepsia only two had a constant reaction, and this was acid. Even cases of stomatitis, which indicates acid fermentation, had stools which were as often alkaline as acid. These results controvert the statements of the Lausanne school to the effect that in carbohydrate dyspepsia the stools are always acid, and in albuminous, or simple dyspepsia, alkaline. Experimentally it was found that glucose in doses of 15 to 25 grms. had no influence on neutral or alkaline stools, and therefore the acidity of the faeces must depend upon more complex processes than the fermentation of carbohydrates. On the other hand, casein modified the habitual acidity of the stools, which become neutral or alkaline.

CHRISTOPHER ROLLESTON.

Research work in summer diarrhoea of children (*'Austral. Med. Journ.,'* 1913, II, p. 11).—R. L. Forsyth finds from the examination of over 300 cases that five main types of bacilli are found: (1) Shiga-Flexner type in 25 per cent. (2) Gaertner type in 24 per cent. (3) The slow fermenter, pure or mixed, in 26 per cent. (4) The Morgan type in 7 per cent. (5) Various liquefiers of gelatine.

F. R. B. ATKINSON.

The house-fly and diarrhoeal disease among children (*'Journ. Amer. Med. Assoc.,'* 1914, LXII, p. 200).—D. B. Armstrong has investigated the influence of the house-fly in producing diarrhoea among infants. Two areas were selected in the Italian quarter of New York which is essentially overcrowded and insanitary, each containing the same number of families and individuals. In the one every effort was made to eliminate the house-fly and to break its contact between filth and food by means of an educational campaign carried on by nurses among the mothers, the distribution of leaflets, and free tickets to cinematograph shows depicting the dangers of the house-fly; in addition the 1700 doors and windows in the area were carefully scoured and large flytraps were placed in all courtyards and stables. The other area was permitted to pursue its usual insanitary course. The author found that in the two areas the ratio of severe diarrhoeal disturbances in infants under five years of age was one to three and that the average duration of sickness in days was as $13\frac{3}{4}$ to $16\frac{1}{3}$. This shows that not only was there more sickness in the insanitary area, but the lessened resistance of the infants was the cause of greater severity in the disease. The sanitary improvement in the one district was further shown to have a beneficial effect on the general physical welfare of all the people in the district, for in it as compared with the unprotected area the number of cases of non-communicable disease was 36 as compared with 40, and of communicable disease 74 as contrasted with 125.

T. R. WHIPHAM.

Infantile diarrhœa in Brisbane (*Austral. Med. Gaz.*, 1914, xxxv, p. 247).—**C. A. Thelander** has treated 400 cases of this complaint in the last two years. His experiences were as follows: The average age-incidence was fifteen months; the average duration was nine days; there were five deaths (1.25 per cent.). About 80 per cent. of cases showed, first of all, loss of appetite. The bowels were often costive at first; the first stools were whitish or very pale yellow; after this they became green and fetid. In about 3 or 4 per cent. a rose-pink stain surrounded the dark green of the stool, and the authors lay stress on this point. The treatment carried out in 390 of the cases was copious supplies of water, no food, calomel 1 to 2 gr. every hour for four doses in the evening and in the morning 20 to 30 gr. of mag. sulph., and if vomiting threatened $\frac{1}{6}$ gr. of menthol. If the vomit was very acid, mag. carb. 5 to 15 gr., one dose every hour for six or eight doses. This medicinal treatment was continued for four days. No milk or milk products were given until the stools were yellow.

F. R. B. ATKINSON.

The concentration of albumin in the blood-serum in the gastro-enteritis of infants (*Riv. di Clin. Pediat.*, 1913, xi, p. 347).—**G. Rovere** has undertaken this research by means of refractometric measurements in four groups of cases: (1) healthy infants (2) chronic diseases of the digestive system, (3) acute diseases of the digestive system, and (4) diseases of the respiratory organs. The conclusions he arrives at are that in chronic affections of the gastro-intestinal apparatus the concentration of albumin is not different from normal. In acute affections of the same kind the concentration increases in proportion to the bad general condition of the infant. This agrees with the increase in viscosity of the blood plasma found by Allaria. The determination of the refractometric index has a prognostic value, diminishing where there is a tendency to recovery and *vice versa*. A water diet does not markedly influence the concentration of albumin in acute gastro-enteritis, but hypodermic injection of physiological solution diminishes it markedly, especially when it has reached a high pathological amount. The improvement produced is, however, temporary and after a certain number of hours the concentration easily reaches the same amount again. Hence the necessity of repeated injections at stated intervals.

VINCENT DICKINSON.

Prophylaxis of summer diarrhœa (*Am. Journ. Obst.*, 1913, LXVIII, p. 149).—**C. G. Kerley** says that successful prevention of death consists in keeping the digestive tract healthy. All milk is pasteurised, and the amount is not pressed during the hot months. The weight chart is disregarded. If a green stool occur castor-oil is given, and water or a cereal decoction is substituted for milk. During hot weather the clothing is reduced to a knit belly-band and a cheese cloth. Cold spongings three times a day are advised. Excellent results were obtained by W. H. Park, viz. fifty tenement children under one year old all being bottle fed with milk from a dépôt. On the least sign of ill-health the doctor was notified, with the result that not a single infant died during the summer.

CHRISTOPHER ROLLESTON.

Medicinal treatment of summer diarrhœa (*Am. Journ. Obst.*, 1913, LXVIII, p. 152).—**W. L. Carr** advocates as inaugural treatment of mild

infections irrigation of stomach and colon, and castor-oil in 1 to 2 dram doses every hour for three doses. Calomel in doses of $\frac{1}{10}$ to $\frac{1}{5}$ gr. with $\frac{1}{2}$ gr. doses of sodium bicarbonate is useful if the flow of bile is slow, as shown by cheesy and offensive stools. If much colic paregoric should be added to the castor-oil in one dose only of 5 to 8 drops. If dry tongue and intestinal instability continue after the elimination of the food that has caused the disease, calomel, soda, and salol should be given in doses of $\frac{1}{20}$, $\frac{1}{2}$ and 1 gr. respectively. Peptonised gruel and malted foods made with or without milk lessen the work of the gastric mucous membrane. Fat-free whey and lactic acid fat-free buttermilk should then be tried. Bismuth is valuable if watery stools continue after cessation of acute symptoms. Toxæmic cases with high fever should be treated by colon irrigation of sterile salt water, at a temperature of 105–110° F. (1 dram to the pint) every two or three hours. If irritability of the intestine continue opium should be given in the form of the deodorised tincture in $\frac{1}{4}$ to $\frac{1}{2}$ minim doses. If much vomiting $\frac{1}{50}$ grain of morphia should be given hypodermically with $\frac{1}{1000}$ grain of atropia. If much collapse and defective oxygenation brandy should be given in 3 to 5 drop doses. Camphor, strychnine, and black coffee can be used for the same purpose. After the attack is over two or three drops of dilute hydrochloric acid are useful in restoring the normal function of the stomach, and its work may be advantageously diminished by pancreatisation of the food.

CHRISTOPHER ROLLESTON.

One hundred and seventeen cases of infantile diarrhœa treated by intestinal implantation of *B. lactis bulgaricus* (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 164).—R. O. Clock has treated a series of cases of diarrhœa in infants with the Bulgarian lactic acid bacillus at the Babies' Hospital, New York. Tablets were made of a pure culture of the organism, and one or two tablets were usually given every two or three hours, but in severe cases two, or even three, tablets were given before and after each feeding, making a total in some cases of forty-two tablets in the twenty-four hours. Seventy-four of the infants were kept on this milk diet, and forty-three were placed on a diet of barley water for twenty-four to forty-eight hours, after which small quantities of boiled skimmed or whole milk were usually added to the diet. Twenty-nine of the latter were given a preliminary dose of castor oil, but no cathartic was administered to those who were on a milk diet. Improvement was shown under the implantation method by a rapid gain in weight, a rapid change in character of the stools to a normal colour and consistency, regardless of their number, and an improved general condition of the patients as evidenced by improved appetite, subsidence of fever, abatement of vomiting, and better appearance. The average gain in weight in these cases was 1·2 oz. for the first twenty-four hours, and 6·2 oz. at the end of the first week; whereas those who were given a starvation diet averaged ·2 oz. at the end of the first day and 1·7 oz. at the end of the first week. For implantation treatment only a pure culture of the bacillus must be used and the culture must show only viable organisms which must be present in sufficiently large numbers.

T. R. WHIPHAM.

Bacillus lactis Bulgaricus in infantile gastro-enteritis (*Med. Record*, 1914, LXXXV, p. 159).—L. H. Schwartz has treated fifty-five cases ranging from a few weeks up to two years of age by this method. Saline

irrigations were used in twenty-seven of the cases and bismuth in thirteen cases with tablets of the bacillus. He found the remedy of great value.

F. R. B. ATKINSON.

The treatment of infantile diarrhoea by saline injections (*'Practitioner,'* 1913, xci, p. 58).—**H. B. Day.**—Saline injections alone without drugs can cure most cases of infantile diarrhoea. Quinton's marine plasma is not superior to artificial saline of the same strength. The administration of medicine is preferable to injections of saline as a routine treatment of infantile diarrhoea. Disregard of dietary instructions is the commonest cause of failure of out-patient treatment. Injections should be given before actual symptoms of collapse arise.

F. R. B. ATKINSON.

Organisation of infant mortality work in Cleveland (*'Pediatrics,'* 1914, xxvi, p. 129).—**H. J. Gerstenberger.**—Cleveland is a town of 630,000 persons—an increase of 330,000 in the last fourteen years. The work started in 1902 with a modified milk dépôt, which was soon replaced by a dairy farm supplying good raw milk. In 1906 an infant clinic and visiting association were added. In 1907 a whole time medical director was appointed and a larger dispensary and emergency beds were provided. The milk was bottled or modified in two other rooms of the same premises. Branch dispensaries for healthy babies were then established and prophylactic stations provided with weighing machines and other simple apparatus. Ailing children were referred to the central dispensary described above, which also undertakes the modification of milk, its distribution by automobile, and the instruction of medical students. In 1911 the scheme was subsidised by the City Council to the amount of 10,000 dollars, and additional prophylactic stations, making eleven in all, were transferred to the Board of Health. Additional nurses were then appointed for cases of ophthalmia neonatorum, for children under guardianship, for teaching the children in school, and other nurses the principles of infant hygiene, and for the fresh air camp. Medical students are instructed in every aspect of the preventive work and in the methods of milk modification.

CHRISTOPHER ROLLESTON.

Heat and infant mortality (*'Arch. of Ped.,'* 1913, xxx, p. 916).—**J. W. Schereschewsky** refers to Liefmann and Lindmann, who distinguished between an early and late summer infant mortality. In the former there is a striking parallelism between the temperature chart and the mortality. Only temperatures of considerable height—22° to 25° C.—are effective in producing an increased infant mortality. In the late summer high mortality no longer sinks to the normal with falling temperature. In the early summer the infants die from diseases referable to the central nervous system, and only 18 per cent. from intestinal diseases. In September from 72 to 78 per cent. died from alimentary troubles. In the early summer 50 per cent. of the patients died after an illness lasting only one or two days. In the latter part only 20 per cent. Indoor temperatures must, however, be taken into account as Rietschel found in Dresden during the cool year of 1910, the indoor temperature was sometimes over 24° F. higher than the outdoor, and in the hot year of 1911 temperatures of 100° F. were reached. The circulation of air is another important factor. Ballard found that in those houses where there was free access to the wind the infant mortality was low. In a low-lying street in Dresden 18.49 of the living

children under a year old died, while in a high-lying street only 2·5 per cent. succumbed. Infants living in cool rooms, such as cellars, showed a smaller increase of summer mortality. The influence of milk as an exciting factor is then criticised. It was found that only the peptonising bacteria in milk have any harmful action when given to dogs. In true milk epidemics adults as well as children are affected. Infants fed on sterilised milk should not suffer, but as a matter of fact rather more infants brought up on this diet died in Halle than those brought up on an ordinary milk. A similar remark applies to condensed milks. Again, as several of the infants die within twenty-four hours, it is difficult to conceive how death can be produced by bacterial action in so short a period. Further, breast-fed infants showed twice the mortality in August that they did in June. The bacteriologist's position is then assailed, and it is pointed out that epidemics known to be due to specific organisms, *e. g.* cholera, are not influenced by temperature. The fly hypothesis is next examined, and it is pointed out that while only 32 per cent. of the breast-fed had diarrhoea, 90 per cent. of the bottle-fed were affected. Both sets of infants derived equal amounts of food from the table so that the selective action of the flies is hardly conceivable. Heat may cause death in infants from heat stroke—a cause of 3–7 per cent. of all infantile deaths. Heat further diminishes the appetite, but increases metabolism, decreases the power of the juices of the stomach, and diminishes the resistance of the organism to bacteria. The severest forms of diarrhoea only appear after exposure to very high indoor temperature, and in them high temperature is always present and in these hydrotherapy produces good results. From these considerations the author recommends improvement in housing conditions, especially as regards ventilation, fresh air, tepid baths, light clothing and feeding, as important points in the control of this disease.

CHRISTOPHER ROLLESTON.

Experimental researches on the influence of heat in young dogs (*'Arch. de méd. des enf.'*, 1913, xvi, p. 577).—**G. Schreiber** and **H. Dorlen-court** summarise their experiences as follows: (*a*) Warmth, by its direct action, can determine symptoms in young subjects. The higher the temperature the more noxious its influence. (*b*) Children at the breast are exposed to such influences as much as those artificially nourished. (*c*) Humidity in the air seems to lower the resistance of the subjects. (*d*) Young dogs introduced into an oven heated to 50° C. rapidly die, with symptoms first of excitement, then collapse, dyspnoea and hyperthermia above 40° C. (*e*) Young dogs placed in a chamber heated to 30° C. up to 37° C. show signs of excitement and fever, accompanied by dyspnoea and wasting. There are no digestive symptoms. Death occurred on the fourth day in one dog although the temperature did not pass 30° C., the others resisted a temperature of 37° C. but showed an arrest of development. They all succumbed to a temperature of 40° C. (*f*) In three of the dogs digestive symptoms occurred, in one vomiting, in two diarrhoea without vomiting. (*g*) Cold baths immediately after excessive heat produced a favourable effect.

F. R. B. ATKINSON.

Treatment.

Serum treatment of diphtheria in Budapest (*'Virchow's Archiv'*, 1913, ccxiii, p. 330).—**S. von Gerlóczy**, whose previous papers on this subject have recently been abstracted (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1909, vi, p. 234, and 1910, vii, p. 409), records his eighteen years'

experience of the serum treatment of diphtheria, *i. e.* from October, 1894, to December, 1911. A table shows the number and mortality of his cases year by year, the number and percentage of cases with laryngeal involvement and the number of cases intubated. The mortality among 7985 patients was 14.1 per cent., the figures ranging from 27.5 per cent. in 1894 to 9.5 per cent. in 1905. The percentage of laryngeal cases in the total number was 45.1, ranging from 79.7 in 1896 to 27.9 in 1910. The mortality of the operated cases which in 1893 and 1894 had been 81.2 and 88.3 per cent. respectively sank in 1905 to 38.8 per cent. This fall is attributed not only to the serum treatment but also to the substitution of intubation for tracheotomy.

J. D. ROLLESTON.

Results of staphylococcus spray treatment in forty-two cases of diphtheria carriers (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 2293).—

W. A. Womer finds that the use of the staphylococcus spray caused no unpleasant symptoms, but that its use did not appreciably lessen the period of quarantine as determined by the presence of diphtheria bacilli in the throat. Moreover, the preparation and distribution of the spray entail a large amount of work if there are many cases. The writer is of opinion that most of the carriers do not apparently spread the disease after sixty days from the day the disease begins.

T. R. WHIPHAM.

Treatment of whooping cough (*Thèses de Paris*, 1913–14, No. 249).—

L. C. E. E. Gravost lays down the following principles of treatment: (1) Combat the paroxysms: For this he recommends an oily suspension of bromoform in an initial dose of four drops daily and for each year of life. (2) Modify the bronchial secretion: Inhalations of various drugs effect this, especially methyl salicylate two parts, eucalyptol one part. (3) Careful antisepsis of the skin and mucosæ. (4) Control the vomiting: The oral administration of adrenalin chloride 1 in 1000 η j–iij daily, as recommended by Fletcher (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 183), has proved most efficacious in this respect.

J. D. ROLLESTON.

Vaccine therapy of pertussis (*Med. Record*, 1913, LXXXIV, p. 1125).

—P. Luttinger used a vaccine made from cultures of the Bordet-Gengou bacillus in ten cases of pertussis aged from 1½ to 4 years and apparently reduced the severity and shortened the duration of the disease. The initial dose was usually 50 millions, the highest single dose 250 millions, the highest total dosage 750 millions and the lowest total dosage 150 millions. In some cases injections were given every twenty-four hours (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 331 and 1913, x, pp. 184, 428).

J. D. ROLLESTON.

Vaccine treatment of pertussis (*Policlínica*, 1914, II, p. 239).—

J. and R. Campos Fillol used this treatment in fifteen cases, fourteen of whom were children aged from 15 months to 7 years and one an adult aged 30 years. The doses ranged with the age of the patient and the date of the disease from 50 to 100 millions. The best results were obtained with autogenous vaccines. Eleven were cured, two were improved, and in two there was no appreciable result. The injections were all given hypodermically, and produced little or no local reaction and only slight rise of temperature. As a rule, after the first injection there was a diminution in the number of attacks, which completely ceased after the third or fourth,

leaving in a few cases a non-paroxysmal cough, which disappeared entirely in a few days.

J. D. ROLLESTON.

Vaccine treatment of typhoid fever in children (*'Policlínica,'* 1913, I, p. 875).—**J. A. Jordán** records five cases of typhoid fever in children aged from 15 months to 12 years treated with vaccines. His conclusions are as follows: (1) The vaccine treatment of typhoid fever in children is harmless. (2) An auto-vaccine is to be preferred to a hetero-vaccine. (3) It is a valuable therapeutic method which rapidly transforms typhoid fever as regards its duration and severity, shortens convalescence and prevents relapses. (4) Large doses and repeated injections are unnecessary. The doses should vary from 5 to 30 millions according to age, and the number of injections from two to four.

J. D. ROLLESTON.

Vaccine therapy in the treatment of gonococcal vulvo-vaginitis (*'Glasg. Med. Journ.,'* 1913, II, p. 84).—**W. R. Jack** reports six cases of vulvo-vaginitis in young children treated with vaccines, but the results were none too encouraging. In three of the six cases a clinical cure was reached. In all the cases a comparatively speedy improvement was attained, the irritation and discharge being much lessened or becoming almost minimal; but in the unsuccessful cases it seemed impossible to get rid of this remainder, whatever dose was used.

J. ALLAN.

Buccal noma following measles cured by local applications of salvarsan (*'Bull. et mém. Soc. Méd. Hôp. de Paris,'* 1914, XXXVII, p. 813).—**H. Esbach** records a case in a girl aged 2 years. The progress of the disease was stopped, and in twelve hours improvement resulted from local applications of 1 in 15 to 1 in 5 salvarsan or neo-salvarsan in glycerin. The applications were made two to four times daily, but more than ten days elapsed before a complete cure was effected. Noma is usually attributed to a fuso-spirillar association, but in this case a smear showed only cocci which were decolourised by Gram.

J. D. ROLLESTON.

Local treatment of Vincent's angina and stomatitis with salvarsan (*'Bull. et mém. Soc. méd. Hôp. de Paris,'* 1914, XXXVII, p. 516).—**C. Flandin**.—A girl, aged 10 years, developed a fuso-spirillar stomatitis on the lesions of pneumococcal herpes. Peroxide of hydrogen, boracic lotion and other local treatment were unsuccessful, but the application of salvarsan powder caused a rapid cure. The paper also contains the histories of six cases of Vincent's angina in adults similarly treated with success, including one recently reported by the abstractor.

J. D. ROLLESTON.

Notes on the serum treatment of cerebro-spinal meningitis (*'Glasg. Med. Journ.,'* 1913, II, p. 254).—**W. C. Gunn** reports on eight cases. On account of the absence of complement from cerebro-spinal fluid, the anti-meningococcal serum was re-activated at the time of each injection by the addition to it of fresh normal human serum. The technique was as follows: 10 c.c. of blood were withdrawn from the median basilic vein of a healthy individual and allowed to stand for a few hours until the serum had separated. This quantity of blood yielded about 5 c.c. of serum in four hours. The serum was then added to the amount of anti-meningococcal serum which was to be injected, the dose varying with the age of the patient. Lumbar

puncture was then performed and a quantity of cerebro-spinal fluid, a little in excess of the volume of the serum to be injected, removed. The subdural injections were always performed with the patient under a general anæsthetic, but not deeply so. The serum was heated to 98° F. before being injected. The injection was made slowly, and, after its completion, the foot of the patient's bed was elevated for an hour to allow the serum to gravitate throughout the cerebro-spinal system. Severe headache and backache were complained of in some cases, and practically all of them were restless for some hours afterwards. The breathing was sometimes shallow for a short time, but no other untoward results were noted. The injections were repeated at intervals of one, two, three, or four days, and sometimes longer, depending upon the stage of the disease, the characters of the cerebro-spinal fluid, and the clinical appearances of the patients. The quantity of the growth of the meningococcus, obtained from a loopful of the deposit yielded by centrifugalising 10 c.c. of the cerebro-spinal fluid, was also taken as an index of the progress of the patient and as a guide to the frequency of the injections. As the fluid cleared and the colonies became more scanty the interval between the injections was lengthened. In favourable cases two or three doses sufficed. In three cases there was complete recovery, in one recovery, but the child was totally deaf, while four cases died.

J. ALLAN.

Treatment of meningitis by drainage of cisterna magna (*Arch. of Ped.*, 1913, xxx, p. 84).—**J. S. Haynes** lays stress upon the disappearance of the Fehling-reducing power of the cerebro-spinal fluid in cases of meningitis. This he regards as pathognomonic, and states that this test may be positive for twenty-four hours before organisms appear in the fluid. With this test positive operation should be immediately performed, except in diplococcal cases, which may be allowed to wait for twenty-four hours. The occipital bone should be trephined in the middle line one inch above the foramen magnum. He claims that here a continuous drainage can be effected without danger of hernia. As yet, out of eight cases, he has had no recovery.

REGINALD MILLER.

Treatment of chorea (*Journ. de méd. de Paris*, 1913, xxxiii, p. 815).—**Collin**.—In mild forms rest in bed, dieting, and freedom from excitement may be all that is necessary. In worse cases, ether sprays to the spinal column and electricity have been abandoned. Salicylate of soda even in large doses seems useless. Antipyrin should be given in doses of half a gramme for each year of age (Comby). These large doses may cause headache, vomiting, diminution in quantity of the urine and may have to be modified. In prolonged chorea arsenic is most in favour. Boudin's liquor, which is an acid solution of arsenic I in 1000, is very efficacious. One begins by 5 grm. of the solution daily and gradually increasing to 20 or 25 grm. Signs of poisoning should be looked for. Arsenical butter is said to be better tolerated. Weekly injection of 30–45 cgrm. of neo-salvarsan intravenously is a valuable remedy. In grave cases opium is to be recommended.

J. PORTER PARKINSON.

Arsenic in chorea (*Med. Press*, 1913, i, p. 616).—**Comby** recommends arsenic in the form of Boudin's solution, which is a solution of arsenious acid (1 in 1000). For a child over seven years of age the initial dose *per diem* is 5 grm., and this is increased daily by 5 grm. until 25 grm. is

reached, when the dosage is reduced in the same ratio. The child has thus nine days' arsenic treatment, by which time the movements have stopped. The integrity of the kidneys should be carefully investigated, as arsenic is contra-indicated if there is albuminuria, and it ought also to be used with caution if the urinary secretion is scanty.

J. ALLAN.

Prolonged hot baths in the treatment of chorea (*Med. Rev. of Reviews*, 1913, xix, p. 655).—W. P. Lucas reports several cases of chorea treated successfully by this method. He began with quarter-of-hour immersions twice daily in a bath of 100° F.; the duration was gradually increased to three-quarters of an hour and the temperature to 110° F. or 112° F. A course of about three weeks was given, the improvement being steady during that time, at the end of which the choreiform movements ceased. One case relapsed after about a year and had a second course of the treatment with favourable results.

J. PORTER PARKINSON.

The treatment of paralysis of anterior poliomyelitis (*Journ. Amer. Med. Assoc.*, 1913, lxi, p. 2219).—H. W. Frauenthal states that the best results are obtained when electrical treatment is begun as soon as paralysis appears and even before the temperature is normal. He gives a sinusoidal current, alternating with a combined galvanic and faradic current which contracts seventy-two times to the minute, synchronous with the heart-beat. Sponge electrodes are used and are applied to the origin and insertions of the muscles as nearly as possible. The writer thinks that too much stress has been laid upon the apparent reaction of degeneration in prognosis and is of opinion that muscles are frequently capable of contraction to a stronger current than the cutaneous surface will tolerate. The strength of the current to be used in treatment should be the weakest that will produce a contraction and is never to be used after contraction of the muscle ceases, nor longer than from two to three minutes on any particular muscle or from six to twelve minutes on the body at one sitting. Strychnine may be given internally or a solution used on a sponge and introduced locally to increase the contraction of the muscle-fibres. Massage is also to be used in the form of light stroking and percussion, together with active and passive exercises. The affected limb should also be immersed in warm water at 95°–102° F. for twenty minutes each night. The notes of a series of cases which have been treated in this way are given.

T. R. WHIPHAM.

Treatment of acute nephritis in the infant (*Ann. de Méd. et Chir. Inf.*, 1914, xviii, p. 229).—Renault and Seginet.—Infantile acute nephritis shows itself chiefly by diminution of urine and retention of chlorides and nitrogen. To relieve the kidney congestion, increase diuresis and stimulate the elimination of the toxins by the skin and bowels are the therapeutic indications. To relieve congestion, dry cupping is useful or wet-cupping or leeches over the kidney region. Wet packs, hot-air baths and vapour baths act on the skin or occasionally baths at 38° for fifteen minutes. Drugs to produce diuresis are not without danger, suppression of salt and reduction of liquid may suffice, or infusions of onions, cereals, *uvæ ursi*, grape juice, etc. Calcium chloride in small doses is a dechlorinating diuretic, and to increase the output of nitrogen, lactose 10–50 grm. a day may be given or subcutaneous injections of glucose 20 c.c. of strength 45 in 1000. Extract of dry kidney may be given 0.10 cgrm. a day for each year of age. Syrup of buckthorn is a useful purgative. Pilocarpine is a dangerous sudorific, acetate of

ammonia is much safer. For diet vegetable broths and cereals and milk. If the latter produce digestive troubles, carbohydrates such as cereals, rice, potato, carrots, lettuce, green haricots, peas, sugar, fruit, etc., may be given. When œdema has disappeared salt may be allowed in a small quantity, and later chicken, eggs, etc., may be given. Complete rest in bed is necessary at first, and careful disinfection of the throat and nose must be carried out. If there be hæmaturia, calcium chloride may be given, or astringents such as tannin or ergot; if it be excessive, adrenalin. In suppression two drops of tincture of cantharides; in the last extremity, decapsulation or nephrotomy. For convulsions chloral and bromides and lumbar puncture. For cardiac failure digitalis and squills are useful, and one must remember that in infants small doses produce the best effects. If the ætiology of the nephritis is diphtheria, 10 c.c. of Roux's serum may be given every three or four days for 3 or 4 doses; if syphilis be the cause mercurial treatment is advisable.

J. PORTER PARKINSON.

Human serum treatment for hæmorrhagic diseases of the new-born (*New York State Journ. of Med.*, 1913, XIII, p. 88).—**J. E. Welch.** A baby, apparently healthy, had on the third day after birth slight bleeding from the vagina. Within a few hours the gums began to bleed, and the bleeding from the vagina increased considerably. At the end of twenty-four hours there was considerable bright red blood passed in the stools. The temperature gradually rose and reached 103° F. on the fifth day. The weight rapidly declined and the voice grew very weak. Normal human blood serum injections were begun at midnight on the fifth day. One ounce was given hypodermically and repeated twice daily for four days. The bleeding began to diminish in a few hours, and at the end of forty-eight hours had ceased entirely, and the infant rapidly regained its normal functions. The author discusses the sites of hæmorrhage, method of production, means of treatment, etc.

J. ALLAN.

Treatment of purulent pleurisies in children (*Journ. de Méd. de Paris*, 1913, xxxiii, p. 499).—**Savariaud.**—The infection comes by way of the bronchi and lung, or more rarely by the lymphatics, but usually by the blood. Pneumococcal empyema is relatively benign and may sometimes be absorbed. It is often encysted. Streptococcal pleurisy is much less common in children; it may complicate broncho-pneumonia or scarlet fever. Tuberculous pleurisy is rarely purulent at first and has an insidious, often afebrile, course. The putrid and gangrenous varieties may follow gangrene of the lung or appendicitis. The tuberculous variety is best treated by aspiration as operation is apt to leave a fistulous channel which may become infected. Pneumococcal varieties may be treated by aspiration if the organism seems to be of slight virulence, but if the liquid persists pleurotomy should be done. The other varieties should be treated by pleurotomy. The operation advised by the author includes the resection of 4–5 cm. of rib. The cure of favourable cases should not exceed seven weeks and the temperature should remain normal after the operation. If the pus does not drain well the cavity may be washed out with a warm solution of hydrogen peroxide. The author considers this quite a safe proceeding if the fluid be warm and the cavity not distended with the fluid. Respiratory exercises are very useful during the last weeks of treatment.

J. PORTER PARKINSON.

The healing process of osteo-sarcoma under the influence of the Röntgen rays (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 547).—**G. E.**

Pfahler reports twelve cases of osteo-sarcoma which he has treated with the Röntgen rays. The majority of these were children and the results have been satisfactory. According to the writer osteo-sarcomata heal by a progressive deposit of lime salts in the tumour areas, until the tumour area attains the solidity and density of normal bone. This process usually begins within a month and is progressive for a year or more, continuing long after the röntgenotherapy has been discontinued. In the twelve cases treated, including the inoperable and recurrent, seven, or over 58 per cent. of the patients completely recovered and remained well from five months to eleven years. One other patient had nearly recovered, interrupted treatment, and remained free from symptoms for five months, when a recurrence followed traumatism. In only one case was there no improvement. Skilful treatment should be given in any inoperable case and should follow when operation seems advisable. When operation will result in deformity or serious loss of bone, röntgenotherapy should be tried for at least a month. The treatment should be given by some one who is familiar with the technique of deep röntgenotherapy. The following are the principles governing the modern technique: The rays must have good penetration, or they will be absorbed by the overlying tissues before reaching the bony tumour. Even with the most penetrating rays the greater proportion will be absorbed by the superficial tissues. The most careful attention is therefore necessary to keep the tube in good condition during the entire treatment. The rays should have a penetration of from seven to eight of the Benoist scale. The quantity of rays should be measured carefully during each application, and the limit of the erythema dose should be reached as quickly as possible, but should not be exceeded. The duration of each application and the frequency will depend on the individual operator's technique and apparatus, but when an erythema dose has been given at any one area of skin, this one area should receive no more treatment for at least two weeks. To measure the dose the Sabouraud pastille and the Holz knecht modified scale, or radiometer, should be used. The skin should be protected by filters. For this the author uses a piece of sole-leather $\frac{1}{8}$ in. thick, and from 1 mm. to 3 mm. of aluminium. This, of course decreases the total quantity of rays, but gives a greater proportion of penetrating rays in comparison with those absorbed in the superficial tissues. It must not be forgotten that a patient can be burned through filters, and a burn is always a disadvantage. Cross-fire application of the rays consists in directing them toward the centre of the tumour from as many angles and through as many different areas of skin as possible. In this way the proportional deep dose is greatly increased, and it is possible to make the dose in the tumour equal to that absorbed by the skin. With such technique massive doses can be given safely.

T. R. WHIPHAM.

X-rays and hypertrophy of the thymus (*Paris Méd.*, 1913-14, iv, p. 599).—**E. Albert-Weil**.—From 1906 to the beginning of 1913 eleven successful cases of hypertrophy of the thymus treated by X-rays have been published. Since the writer's last communication to the Société de Pédiatrie (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1913, x, p. 27), in which he reported three successful cases, he has treated four other children with hypertrophy of the thymus, and in each case obtained a rapid and complete cure by X-rays. Thymectomy is now unnecessary, and has been abandoned in favour of X-ray treatment by its previous supporter, Veau.

J. D. ROLLESTON.

Treatment of thread-worms (*'Ann. de méd. et Chir. inf.'*, 1914, XVIII, p. 91).—**Perrin and Théry** point out that the chief habitat of these worms is the ileocaecal region and not the rectum, and so local treatment cannot succeed by itself. They recommend in addition to separate salt-water injections into the bowel the administration of thymol in the following way: Fasting, then cachets each containing 0.75 to 1 grm. of powdered thymol should be given at intervals of one hour, and half an hour after the third cachet a glass of seidlitz, and a quarter of an hour later a second dose. Water only should be given the day of treatment, as alcohol dissolves thymol and leads to its absorption. The authors also speak well of *santonin* with calomel two days a week for six weeks. Re-infection by the fingers should be guarded against as usual. J. PORTER PARKINSON.

Reviews.

THE PRACTICE OF PEDIATRICS. By CHARLES G. KERLEY, Prof. Dis. Child., New York Polyclinic Medical School and Hospital. Pp. 878. Philadelphia and London: W. B. Saunders & Co., 1914. Price 25s. net.

A NEW text-book of *pædiatrics* can hardly escape comparison with those of other authors. In the present work, perhaps the most noticeable feature is the amount of attention paid to the general management of children in health and disease. Prof. Kerley rightly includes in the practice of *pædiatrics* considerably more than a mere study of children's diseases. Thus the author pays considerable attention to such matters as the exercise and sleep, the nursery and the control of healthy children, and writes well of the general care of children during illness. Other features of the work which are also very attractive are the care with which minor ailments are described and the fulness of the sections dealing with treatment throughout the book. A special chapter is devoted to the discussion of gymnastic therapeutics.

These points, we think, are the distinctive and valuable features of Prof. Kerley's book and enable us to give a hearty welcome to his work.

For the rest, the volume shows many similarities to others of American origin. There is the long discussion on infant feeding which seems so inevitable, although we must gratefully acknowledge that in the present work the subject is not dealt with so lengthily or so over-theoretically as in some other books. There are some curious instances of lack of proportion in the fulness of description in different diseases. To allot more space to "adherent prepuce" than to "adherent pericardium" is surely an example of this; nor can we help noting that the author, in the ten lines allotted to the latter condition, does not avoid being misleading.

The publishers must be praised for having produced so large a work, which is fully illustrated, in so convenient and pleasant a form.

R. M.

INFANT FEEDING. By CLIFFORD G. GRULEE, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College, etc. Second Edition. Pp. 314, with 29 illustrations and 8 coloured plates. Philadelphia and London: W. B. Saunders Co., 1914. Price 13s. net.

The second edition of this book has been revised, and the author has embodied in the text many scientific facts which have come to light during

the past two years. Essentially, however, the book remains the same—a clear and practical treatise on the feeding of infants, from which much useful information may be gleaned. As we remarked in our notice of the first edition,* the author is a follower of the German school rather than of the methods advocated by so many of his fellow countrymen—a fact which perhaps lends additional value to the work.

The book is well got up, and the illustrations, consisting mainly of full-page reproductions of photographs, are excellent. The coloured plates may fairly be termed artistic, and the majority of them are distinctly good.

T. R. W.

DISEASES AND DEFORMITIES OF THE FOOT. By JOHN JOSEPH NUTT, B.L., M.D. New York: E. B. Treat & Co. Price \$2.75.

THE 'Diseases and Deformities of the Foot' is a book specially written for the use of physicians, and we can say with confidence that almost every physician could read this book with great benefit. Though the peculiarities and deformities of the foot form only a small part of orthopædics, it is the part that perhaps is most neglected. We see the truth of this in this country, for the physicians apparently have only just become aware that the proper treatment of paralytic deformities, due to infantile palsy, is to place the limb in the correct position, and maintain it there, if necessary, with the application of splints. Luckily, celluloid splints have taken their fancy, and they now teach their use, although these present no advantage over the light wood splints, or the still lighter poroplastic splints, the application of which has been a routine teaching on the surgical side for many years.

Dr. Nutt has dealt with the subject of the foot extremely fully, and his illustrations of the disabilities resulting from the different deformities are most interesting. We are glad to see, too, that the more complicated apparatus continually being invented by his ingenious countrymen is not preferred to the simpler and quite as efficient methods.

We can confidently recommend this book, not only to the physician, but to the general practitioner and surgeon as well. It is well illustrated and the points are clearly made.

D. C. L. F.

THE WELLCOME HISTORICAL MEDICAL MUSEUM.

The Historical Medical Museum, which was founded by Mr. Henry S. Wellcome in connection with the Seventeenth International Congress of Medicine, was re-opened on May the 28th as a permanent institution in London. It is now known as the "Wellcome Historical Medical Museum" and is open daily from 10 a.m. to 6 p.m., closing at 1 p.m. on Saturday; entrance 54A, Wigmore Street, Cavendish Square, W. Since closing last October the collections in the Museum have been considerably augmented and rearranged. Many objects of importance and interest have been added which it is hoped will increase the usefulness of the Museum to those interested in the history of medicine. Members of the medical and kindred professions are admitted on presenting their visiting cards. Tickets of admission may be obtained by others interested in the history of medicine on application to the Curator, accompanied by an introduction from a registered medical practitioner. Ladies will be admitted *only* if accompanied by a qualified medical man.

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CARDIAC ARRHYTHMIA IN DIPHTHERIA.

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INTRODUCTION.

IN health the ventricles respond regularly to rhythmical impulses which arise in the sino-auricular node and pass through the auricle to the auriculo-ventricular node and along the bundle of His and its branches.

Sinus arrhythmia.—Normally there occurs a slight quickening of the pulse during inspiration and a slowing during expiration, producing a definite irregularity known as sinus arrhythmia. This variation, due to vagal influence, is induced by respiratory movement and is constant in children and young adults, but generally absent in later life. Sinus arrhythmia, when extreme, may give rise to marked irregularity of the pulse, but it is readily recognised owing to its constant relationship to respiration (see Fig. 1).

Pathological irregularities of the pulse.—These may be divided into two groups: (1) Irregularities dependent upon abnormal impulse formation. These include the majority of irregularities, and may be due to premature contractions, auricular flutter or auricular fibrillation.

(2) Irregularities dependent upon interference in conduction, or heart block.

(1) Abnormal impulses may arise from the heart muscle itself or from the tissue at the junction of auricles and ventricles, the auriculo-ventricular node. The contractions of the ventricles to

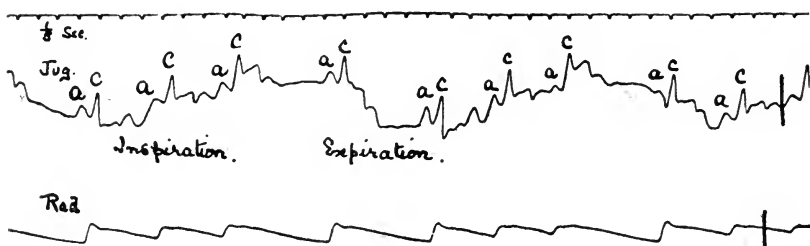


FIG. 1.—Marked sinus arrhythmia. Showing the relationship of the arrhythmia to respiration; the pulse quickens during inspiration and slows during expiration. Rate 75 per minute.

which they give rise are premature and are known as extra-systoles; auricular, ventricular or atrio-ventricular extra-systoles according to their origin. Extra-systoles or premature contractions produce premature beats at the wrist, with consequent irregularity of the pulse. Premature contractions are recognised on auscultation by the fact that the heart sounds to which they give rise immediately succeed

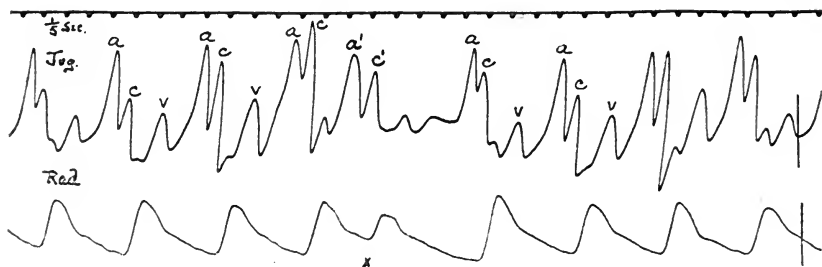


FIG. 2.—A single premature* auricular contraction. The premature contraction at X is followed by a pause longer than that occurring between two normal beats. In the jugular curve the *a-c* interval for the premature contraction is greater than $\frac{1}{2}$ sec. Rate 79 per minute.

those of the preceding contraction and are followed by a pause greater than that occurring between two normal beats. As a rule they have no definite relationship to respiration (see Fig. 2). The varieties of premature contractions can only be differentiated by means of graphic records. Premature contractions commonly occur

singly, occasionally in short runs. Premature contractions may, however, initiate a new and more rapid rhythm composed of a succession of such premature contractions, with the production of an auricular, ventricular or atrio-ventricular tachycardia as the case may be. Following Lewis, the term "atrio-ventricular" is substituted

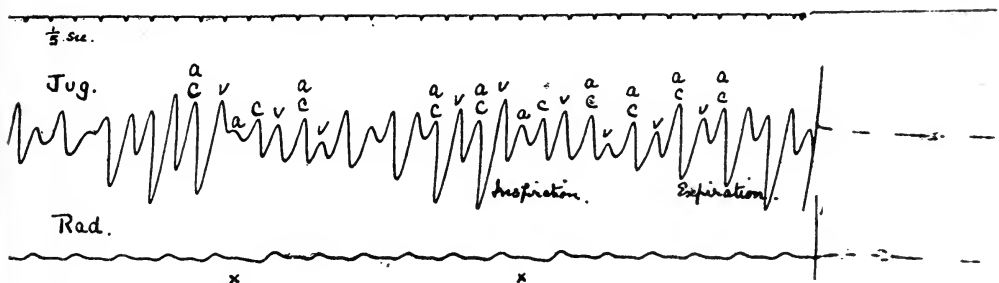


FIG. 3.—CASE 1.—Thirteenth day, 6 p.m. Atrio-ventricular rhythm, showing a return, under vagal influence, to the normal rhythm at x, maintained for one beat only in each respiratory cycle. Rate 160 per minute.

throughout the present paper for the word "nodal" on the ground that the latter is not sufficiently distinctive.

A special variety of auricular tachycardia has been described under the term auricular flutter.

Auricular fibrillation is a condition in which the normal auricular

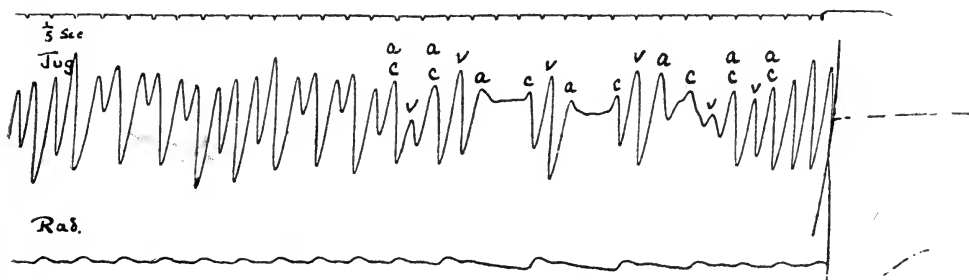


FIG. 4.—CASE 1.—Thirteenth day, 6.30 p.m. Offset and onset of atrio-ventricular rhythm, with a rate of 180 per minute. It shows three intervening beats at approximately half the rate. In these the *a-c* interval varies from $\frac{2}{3}$ to $\frac{1}{3}$ sec. producing three radial beats of different length.

contractions are replaced by rapid fibrillary movements of the auricle. The ventricular response is haphazard and gives rise, except on very rare occasions, to complete irregularity of the pulse.

Pulsus alternans is the term applied to an irregularity of the pulse in which each alternate beat is smaller than the one preceding.

The pause leading up to the small beat is either equal to or greater than that which follows the same beat, thus differentiating the condition from the irregularity due to the presence of premature contractions.

(2) Supra-ventricular impulses may either be delayed or entirely blocked on their way to the ventricle. Heart block is not a common cause of pulse irregularity. Delay in conduction, regular degrees of block such as 3:1 and 2:1 and complete heart block all occur with complete regularity of the pulse. Only in those cases where the block is infrequent and in the nature of "dropped beats" or where such degrees of block as 3:2 or a "mixed" block are present, does the pulse become irregular. Sudden and great reduction in the pulse rate is usually the result of heart block. For a detailed account of these conditions and of the pathological processes underlying them, the reader is referred to the writings of Mackenzie (5) and of Lewis (4).

HISTORICAL.

In 1910, Magnus-Alsleben (6) published tracings showing the presence of complete heart block, which developed on the fourth day of disease in a case of severe faucial and laryngeal diphtheria. The heart block persisted until death on the ninth day.

Fleming and Kennedy (1) in the same year reported a similar case.

Rohmer (8), in 1911, published electrocardiograms of two fatal cases showing complete heart block. The same author (9), in 1912, reported five additional fatal cases in which the pulse remained regular. Two cases showed complete heart block, three cases were possibly examples of atrio-ventricular rhythm.

Price and Ivy Mackenzie (7) described a fatal case of complete heart block, associated with auricular fibrillation. In the absence of more conclusive proof than that afforded, the auricular fibrillation must be regarded as doubtful.

Sperk and Hecht (10), in 1912, reported a case of 2:1 heart block.

Hecht (2), in a recent monograph on the heart in childhood, deals at some length with cardiac disorders in diphtheria. He obtained electrocardiograms from forty-two cases, while at least an equal number, which clinically gave no evidence of cardiac involvement, were not electrocardiographed. His series included one case of 2:1 heart block, appearing during the first week and persisting four months later and one case of atrio-ventricular rhythm which

persisted for several days, when there was a return to normal rhythm interrupted by extra-systoles, auricular, ventricular, and atrio-ventricular. Recovery took place. A third case presented, on the sixteenth day of disease, frequent premature contractions which persisted until death on the thirty-fifth day from collapse of lung secondary to diaphragmatic palsy.

Hume (3) reported three fatal cases and one which recovered. Of the fatal cases two showed premature auricular contractions on the ninth day, atrio-ventricular or nodal rhythm the following day and a return to normal rhythm, interrupted by premature auricular contractions, before death. An intervening rhythm of uncertain nature was regarded tentatively as auricular flutter. In a third case, also presenting premature auricular contractions and atrio-ventricular rhythm, 2:1 heart block developed three days before death. In the fourth case, in addition to premature auricular contractions, paroxysms of auricular tachycardia occurred; the patient ultimately recovered.

Thus, in eighteen recorded cases of diphtheria in which graphic records of the heart's action were obtained, the following conditions were present: Auricular premature contractions, five cases; auricular tachycardia, one case; ventricular premature contractions, one case; atrio-ventricular premature contractions, one case; atrio-ventricular rhythm, seven cases; heart block, 2:1, three cases; heart block, complete, six cases.

In practically all the fatal cases the myocardium was the seat of fatty change; in two, definite myocarditis was present. In only two of the six cases of complete heart block investigated microscopically was there a lesion of the auriculo-ventricular node or bundle. In three cases of atrio-ventricular rhythm the auriculo-ventricular node and bundle were healthy; the sino-auricular node was the seat of an inflammatory process in two of the cases.

The frequent failure to discover changes post-mortem to account for the conditions during life is noteworthy. Many exhaustive investigations into the condition of the heart muscle and conducting tissues in fatal cases of diphtheria, notably those of Tanaka (11) have produced similar negative results.

PRESENT OBSERVATIONS.

The present paper is based on more than 750 polygraphic curves obtained from children under ten years of age, in whom the diagnosis of diphtheria was confirmed bacteriologically: 120 cases

were investigated. Polygraphic tracings were taken in all the severe cases, with a single exception, at least once a day from the time of admission. Twenty-five consecutive mild and moderately severe cases were traced on alternate days throughout their stay in hospital, a period varying from five to eight weeks, in order to

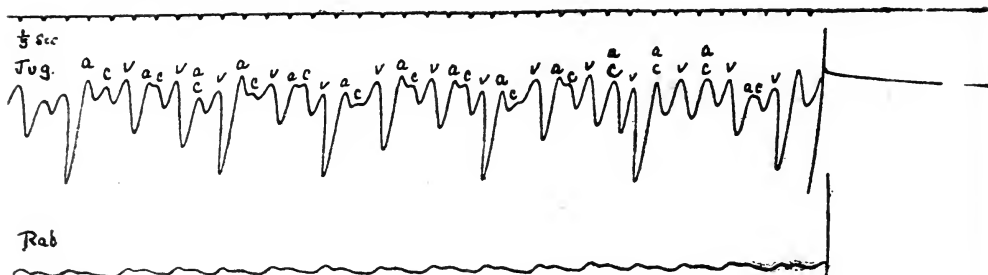


FIG. 5.—CASE 1.—Fourteenth day. Arrhythmia due to a varying *a-c* interval, which shows transition stages from almost $\frac{1}{5}$ sec. to true atrio-ventricular beats where *a* and *c* fall together. The variation in the length of the radial beats corresponds to the variation in the length of the *a-c* intervals. Rate 133 per minute.

determine the incidence and the nature of the arrhythmia in this type of case.

Antitoxin.—Mild cases received on admission 8000 units, cases of moderate severity 12,000 to 16,000 units, severe cases 16,000 to 20,000 units. In moderate and severe cases the antitoxin was

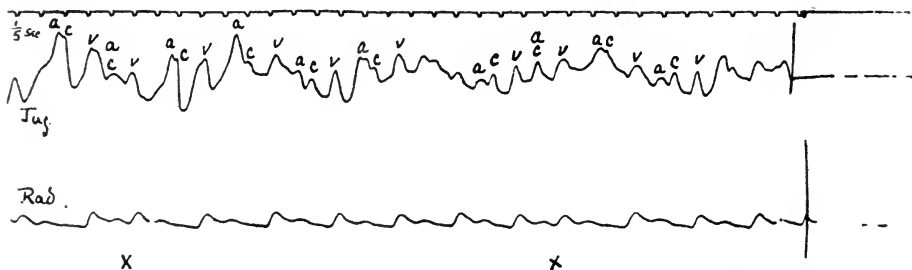


FIG. 6.—CASE 2.—Twentieth day. Premature atrio-ventricular beats at *x*, followed in each case by a second atrio-ventricular beat with an *a-c* interval less than $\frac{1}{10}$ sec. Rate 116 per min.

repeated once or twice. Intra-muscular injections were given in each case.

Method of investigation.—The records were taken with a Mackenzie polygraph. By this means simultaneous tracings of the jugular and radial pulses were obtained, with a time-marking record. The observations were made about the same time each afternoon.

Method of analysing tracings.—The jugular curve is marked by comparison with the radial. The distance from the index mark to any given radial upstroke is measured by dividers. To this is added a space representing $\frac{1}{10}$ sec., this being the transmission time from the neck to the wrist. One limb of the dividers is now placed

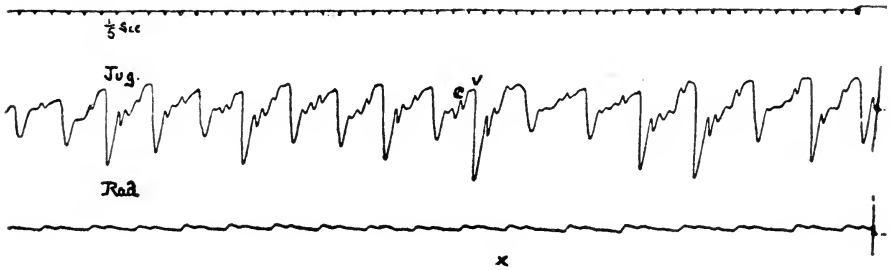


FIG. 7.—CASE 3.—Twenty-fifth day. Showing a change in rate at *x*. The nature of the rhythm is doubtful as the *a* waves cannot be accurately determined. Rates 105 and 83 per minute.

against the index mark of the jugular curve, the other limb when brought to rest on the jugular curve indicates the upstroke of the rise due to the corresponding carotid pulsation, *c*.

The rise *v* is due to venous stasis before the auriculo-ventricular valves open. The fall of this wave corresponds exactly to the

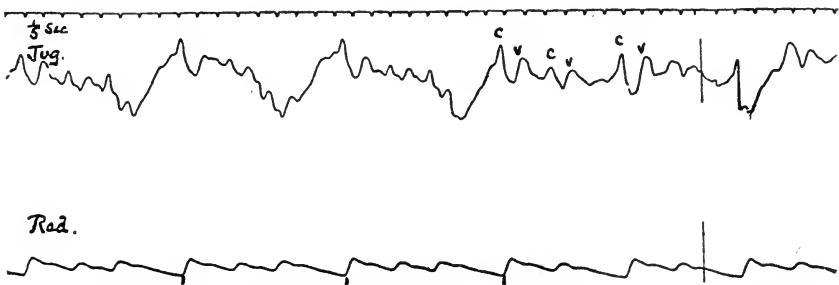


FIG. 8.—CASE 3.—Thirty-seventh day, 7.5 p.m. Frequent premature auricular contractions occurring singly and in pairs. Rate 105 per minute.

dicrotic notch on the radial curve. The rise occurring immediately before *c* is due to auricular systole and is called the *a* wave. The space between these two waves, the *a-c* interval, represents the time occupied by the passage of the impulse from the auricle to the ventricle. Normally the *a-c* interval measures $\frac{1}{5}$ sec. or less.

A.—TYPE OF ARRHYTHMIA IN MILD AND MODERATELY SEVERE CASES.

Apart from normal sinus arrhythmia, the only type of irregularity met with in these cases was due to premature auricular contractions, which occurred in 28 per cent. of cases. They appeared as early as the ninth and as late as the sixty-sixth day of disease; their average duration was three days. They produced only slight arrhythmia and were ignored in treatment, as they were unaccompanied by any other symptoms or signs of cardiac involvement.

B.—TYPE OF ARRHYTHMIA IN SEVERE CASES.

Three cases, fatal from toxæmia, developed no arrhythmia. Five cases developed so-called "cardiac paralysis," with gallop rhythm on auscultation, cardiac dilatation, hepatic enlargement and marked arrhythmia. This arrhythmia was due to the presence of frequent premature contractions, and in two cases these were followed by paroxysms of tachycardia. The nature of the arrhythmia is discussed in each case, together with the other physical signs present at the time.

The term gallop rhythm as applied to the triple character of the heart sounds on auscultation has been used in the descriptions of the severe cases. The fact that such auscultatory phenomena may be present with a regular pulse renders the term undesirable.

CASE 1.—"*Cardiac Paralysis.*" *Premature atrio-ventricular contractions. Atrio-ventricular rhythm. Prolonged a-c interval. Death.*

D. M.—, female, aged 7 years, was admitted on the third day of disease suffering from severe faucial diphtheria with considerable œdema of the fauces and subcutaneous œdema of the neck. The pulse remained regular for ten days with a rate varying from 130 to 84 per minute. Sinus arrhythmia was almost constant. On the tenth day gallop rhythm was present on auscultation and persisted until death. The pulse was regular but feeble. On the thirteenth day the pulse became irregular. At 4 p.m. the rate was 122 per minute; the irregularity was due to the presence of beats of varying length with a corresponding variation in the length of the *a-c* interval. The long beats had an *a-c* interval of more than $\frac{1}{2}$ sec., that of the shorter beats varied from $\frac{1}{3}$ – $\frac{1}{10}$ sec. The variation had no constant relationship to respiration. Deep cardiac dullness extended 1 in. to the right of the middle line and 1 in. beyond the left nipple line. Liver dullness extended $1\frac{1}{2}$ in. below the costal margin. At 6 p.m. the pulse-rate had increased to 160 per minute and atrio-ventricular rhythm was present, interrupted at the beginning of each respiratory cycle by a long beat, corresponding to which in the jugular curve was a normal *a-c-v* sequence. This suggested the return, under vagal influence, to a normal rhythm, maintained for one beat only in each respiratory cycle (see Fig. 3). At 6.5 p.m. atropin, $\frac{1}{100}$ gr., was injected subcutaneously. During the next hour there was frequent interchange between the irregular rhythm of 4 p.m. and an atrio-ventricular tachycardia at the rate of 180 per minute. The former predominated for the first fifteen minutes, the latter subsequently (see Fig. 4). At 11.30 p.m. the pulse was feeble and very irregular, with a rate of 100 per minute. The *a-c* interval was variable and occasional

atrio-ventricular premature contractions occurred. On the 14th day the rhythm was chiefly atrio-ventricular. At 4 p.m., two hours before death, the pulse was irregular, with a rate of 133 per minute. The *a-c* interval showed various transition stages from almost $\frac{1}{2}$ sec. to true atrio-ventricular beats where *a* and *c* fell together, the variation in the length of the radial beats corresponding exactly to the variation in the length of the *a-c* interval (see Fig. 5).

CASE 2.—“*Cardiac Paralysis.*” *Premature atrio-ventricular contractions.*
Recovery.

V. B., female, aged 6 years, a case of severe hæmorrhagic diphtheria, was admitted on the 5th day of disease. On the 15th day the pulse became irregular from the presence of frequent premature atrio-ventricular contractions. Deep cardiac dulness extended 1 in. to the right of the sternum and 1 in. outside the left nipple line. Gallop rhythm was present on auscultation and persisted until the 20th day, the arrhythmia, however, remained until the 22nd day, with no change in cardiac dulness. The pulse at this time was feeble and the rate 116 per minute (see Fig. 6). On the 23rd day the pulse again became regular and remained so throughout convalescence.

CASE 3.—“*Cardiac Paralysis.*” *Frequent premature auricular contractions. Auricular tachycardia.* *Recovery.*

E. C., female, aged 6 years, a case of severe faucial diphtheria, was admitted on 3rd day of disease. From the 11th to 16th days the pulse was regular, the rate varying from 72 to 52 per minute. On the 17th day the pulse became irregular from the presence of occasional premature auricular contractions. Cardiac dulness extended 1 in. to the right and 4 in. to the left of the mid-line. Gallop rhythm was present on auscultation. Liver dulness extended $1\frac{1}{2}$ in. below the costal margin. There was some restlessness and occasional cyanosis. This irregularity of the pulse persisted for eight days. On the 25th day frequent paroxysms of increased rate occurred. For two days two distinct rhythms alternated. The one with a pulse rate of 80 to 75 per minute was occasionally interrupted by premature contractions. The other was a regular rhythm and varied in rate from 125 to 105 per minute (see Fig. 7). Cardiac dulness was still increased and gallop rhythm persisted on auscultation. The liver extended $3\frac{1}{2}$ in. below the costal margin, was painful and very tender. There was extreme restlessness. On the 27th day the more rapid rate, 135 to 120, became constant but was interrupted by premature contractions. Cardiac and liver dulnesses were reduced and the patient was easier. On the 37th day, pneumonia having supervened, the patient again became restless. Deep cardiac dulness extended 1 in. to the right and $4\frac{1}{2}$ in. to the left of mid-line. The liver extended 2 in. below the costal margin. At 7 p.m. the rhythm was normal, the pulse was regular with a rate of 88 per minute. At 7.5 p.m. the pulse became irregular from the presence of premature auricular contractions (see Fig. 8). The premature contractions became more frequent and led up to a paroxysm of auricular tachycardia, with a rate of 140 per minute, lasting for 30 minutes. Slight pulsus alternans was present (see Fig. 9). The following day the pulse was regular, with a rate of 110 per minute, and an *a-c* interval of $\frac{1}{2}$ sec. No further irregularity of the pulse occurred and the patient was discharged on the 100th day.

CASE 4.—“*Cardiac Paralysis.*” *Frequent premature contractions.* *Death.*

A. H., male, aged $8\frac{1}{2}$ years, was admitted on the 5th day of disease with very extensive false membrane, considerable faucial œdema and subcutaneous œdema of the neck. The pulse was feeble but remained regular for two days. The rate was 70 per minute, the *a-c* interval was less than $\frac{1}{2}$ sec. and slight sinus arrhythmia was present. On the 8th day the pulse became irregular from the presence of frequent premature contractions, occurring singly and in pairs. The pulse rate was unchanged (see Fig. 10). Cardiac dulness extended 1 in. beyond the left nipple line; there was

no increase to the right of the sternum. First and second sounds were present in all areas. The patient was very restless and extremely pale. On the 9th day at noon the radial pulse was almost imperceptible. There was marked pulsation in the neck

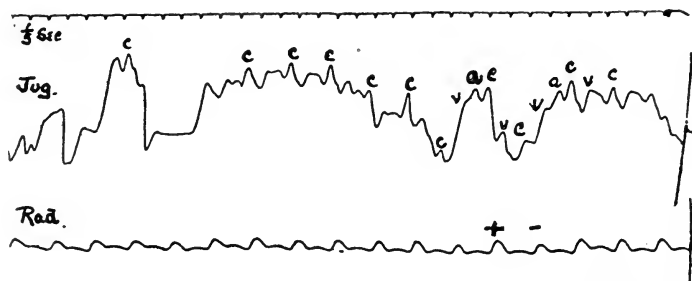


FIG. 9.—CASE 3.—Thirty-seventh day, 7.15 p.m. Auricular tachycardia showing slight pulsus alternans. Rate 140 per minute.



FIG. 10.—CASE 4.—Eighth day. Frequent premature contractions occurring singly and in pairs. The nature of the premature contractions is doubtful. There is no *a* wave in the jugular curve and the pauses following the premature contractions are either equal to or less than those following normal beats.

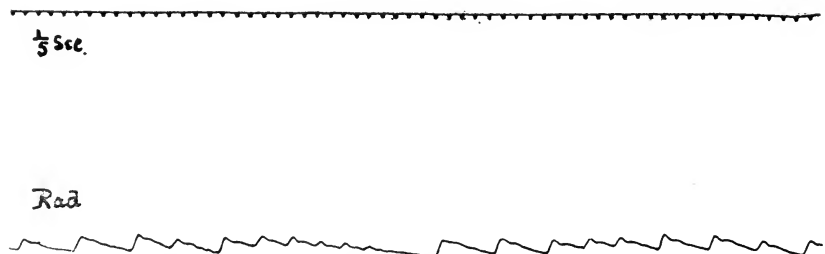


FIG. 11.—CASE 5.—Sixth day. Runs of premature contractions. Here also the nature of the premature contractions is uncertain.

and a jugular tracing taken one hour before death showed the persistence of the same irregularity. Gallop rhythm was present on auscultation and the liver extended $2\frac{1}{2}$ in. below the costal margin. The nature of the premature contractions in this case is uncertain. It is difficult to explain the absence of *a* waves when the *c* and

v waves are so prominent and in a case where venous pulsation in the neck was well marked.

CASE 5.—“*Cardiac paralysis.*” *Frequent premature contractions. Death.*

D. F—, female, aged 8 years, was admitted on the fifth day of disease in a similar state to the preceding patient (A. H—). The pulse was regular, with a rate of 102 per minute. The *a-c* interval was normal. On the sixth day the patient was in a low semi-conscious state and there was suppression of urine. At 2.20 p.m. the pulse became irregular from the presence of premature contractions, the irregularity persisting for three hours (see Fig. 11). At 5.30 p.m. the pulse again became regular and remained so until 8 p.m., when it became imperceptible at the wrist, death occurring an hour later. Gallop rhythm on auscultation developed with the arrhythmia, but there was no increase in cardiac dulness. The nature of the premature contractions in this case also is doubtful. The probability is they were auricular in origin.

CASE 6.—*Toxæmia. No arrhythmia. Death.*

H. H—, male, aged 7 years, was admitted in a toxic state on the third day of disease and died the following day. On admission no jugular tracing was obtained owing to his extreme restlessness. The radial pulse was regular with a rate of 130 per minute. Six hours before death the pulse was regular and the rate 62 per minute. Slight sinus arrhythmia was present. No *a* waves were present in the jugular curve. There was no increase in cardiac dulness, and first and second heart sounds were present throughout. Liver dulness extended 1 in. below the costal margin.

CASE 7.—*Toxæmia. No arrhythmia. Death.*

A. H—, female, aged 4½ years, a similar case to the preceding, was admitted on the fourth day of disease and died on the 6th day. The pulse remained regular, with a rate which varied from 144 to 90 per minute. The *a-c* interval was less than ¼ sec. Cardiac dulness extended 1 in. to the right of the mid-line and first and second sounds were present in all areas. Liver dulness extended 1 in. below the costal margin.

CASE 8.—*Toxæmia. No arrhythmia. Death.*

S. W—, male, aged 8 years, a similar case to the two preceding ones, was admitted on the third day of disease and died the same night. Four hours before death the pulse was imperceptible at the wrist and a jugular tracing could not be obtained owing to the restlessness of the patient. The heart was regular. The rate at the apex was 190 per minute and the heart sounds were tic-tac in character. The apex beat was in the 5th space 1 in. outside the left nipple line. There was no increase in cardiac dulness to the right.

PATHOGENY.

The pathological changes underlying the condition known as “cardiac paralysis” are obscure. The associated arrhythmia would appear to depend upon abnormal impulse formation. In one case in the present series there was evidence that the centre of impulse formation was unstable and varied in situation between the sino-auricular node and the auriculo-ventricular node, the latter ultimately becoming the dominant centre for a new rhythm. The variation in the sequence of auricular and ventricular systoles in this case was so rapid that it suggests the presence of a disordered nervous control.

THE PRACTICAL SIGNIFICANCE OF CARDIAC ARRHYTHMIA.

It is highly important that the varieties of cardiac arrhythmia met with in diphtheria should be recognised. Sinus arrhythmia, especially during the period of slow pulse rate occurring after the second week, may produce very marked arrhythmia and give rise to needless anxiety (see Fig. 1). Premature auricular contractions occurring singly and infrequently produce an arrhythmia which is unaccompanied by signs of cardiac inefficiency (see Fig. 2). Patients exhibiting either of these irregularities may, so far as the cardiac condition is concerned, safely be allowed up at the end of the fourth week and should not be detained in bed on account of the arrhythmia. On the other hand, the arrhythmia associated with the condition known as "cardiac paralysis," a syndrome including cardiac dilatation, gallop rhythm on auscultation and hepatic enlargement, and accompanied in most cases by restlessness, is of very grave significance, three of the five cases presenting this arrhythmia, in the present series, proving fatal. This arrhythmia is due to frequent premature contractions and is accompanied in some cases by paroxysms of tachycardia. The condition is an indication for absolute rest. Drug treatment is of doubtful value.

SUMMARY.

(1) The irregularities of the pulse occurring in 120 cases of diphtheria in children under 10 years of age were investigated by means of the polygraph.

(2) Sinus arrhythmia was constant with pulse rates below 100 per minute.

(3) Premature auricular contractions, occurring singly and infrequently, were present in 28 per cent. of cases investigated systematically and constituted the sole irregularity in mild and moderately severe cases.

(4) Three cases, fatal from toxæmia, developed no arrhythmia and no heart block.

(5) Five cases, of which three were fatal, developed so called "cardiac paralysis" with marked arrhythmia due to very frequent premature contractions. In two of the cases the premature contractions led up to paroxysms of tachycardia, and in one case the tachycardia was associated with an arrhythmia dependent upon a changing *a-c* interval, which varied from $\frac{2}{5}$ sec. to less than $\frac{1}{10}$ sec.

(6) Premature ventricular contractions, auricular flutter, auricular fibrillation and heart block—apart from a prolonged *a-c* interval—did not occur in this series.

(7) No case of sudden death was met with, and judging from the more recent literature in cases which are carefully investigated sudden or unexpected death is extremely rare.

I am indebted to my former colleague, Dr. J. D. Rolleston, of the Grove Hospital, for permission to investigate cases under his care.

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SUBACUTE ATROPHY OF THE LIVER IN CHILDHOOD.

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ACUTE yellow atrophy, or, more correctly, acute diffuse necrosis of the liver, is a rare disease at any age, but is by no means unknown in childhood. Merkel in 1894 (10) collected eighteen cases and Schmidt (15) sixteen cases in 1897 in children of ten years of age and under, and other cases have been reported since then. The subacute form of the disease seems, however, to have attracted less attention. This is probably not due to the greater rarity of this type, for Milne (8, 9) in 1909 was able to record three cases that had come under his own observation, and in a second paper two years later alludes to two further cases that he had seen, and expresses his opinion that the subacute form of the disease is commoner in children than in later life. The more probable reason for the scanty number of cases that are to be found in the literature is twofold: in the first place the subacute form is less striking in the clinical picture it presents than is the acute type, and is therefore less likely to attract attention; and, secondly, the symptoms and signs are, as will be

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seen, uncertain in their significance and far from pathognomonic, and the diagnosis correspondingly difficult, and often only to be made as the result of autopsy. The disease, however, as seen in children presents several points of interest both in its clinical and pathological aspects, points which are illustrated by the following nine cases, which are all that I have been able to find after a fairly close search through the literature.

CASE 1 (Venn) (16).—Girl, aged 7 years, good family history, and no previous illness. The child had been jaundiced for eight months previous to admission to the Victoria Hospital for Children in February, 1884, but had had no pain. There had been constipation and some vomiting after food, and the child had been quiet and drowsy. On admission the patient was a well-nourished child, deeply jaundiced. The abdomen was uniformly distended and tympanitic, but was not painful on pressure, and there was no ascites. The right lobe of the liver could be felt below the ribs, while the left lobe was uniformly enlarged, extending three fingers breadth below the ensiform cartilage. Bile was present in the urine, and the motions were light-coloured. The appetite was good, but there was great thirst. A few days after admission there was some hæmorrhage from the bowels and a hæmorrhagic eruption appeared on the body; there was also some bleeding from the gums. The liver at first became larger and then smaller; vomiting was severe during the last few days of life, and the patient became comatose and died about nine weeks after admission. At the autopsy there was no ascites. The liver weighed 300 grm. and was of yellowish-white colour; it was shrunken and the edges thinned; the surface was smooth. The right lobe was of nutmeg appearance with yellow infiltrations, and the left lobe showed yellow patches. The spleen was hard. Microscopically the liver cells were much atrophied, with granular *débris*. There was some evidence of interstitial hepatitis, but in no part had this proceeded to form fibrous tissue. There was an excess of bile capillaries, probably newly formed. No organisms could be seen, and the blood-vessels showed nothing noteworthy.

Note.—The diagnosis is given in the report of this case as acute yellow atrophy supervening on hypertrophic cirrhosis, but the presence of jaundice and the absence of excess of fibrous tissue renders it more probably an example of acute supervening on subacute atrophy, and as such I have included it here.

CASE 2 (Klopstock) (5).—Girl, aged 10 years, who died of interstitial pneumonia, and who during life presented no symptoms of liver disease except a slightly enlarged liver. There was no jaundice. At the autopsy there was found typical subacute atrophy of the liver.

CASE 3 (McDonald and Milne) (1) (8).—Girl, aged 4 years, who had suffered from recurrent attacks of jaundice. The family history was good, and the child had previously suffered from chicken pox and measles. A fortnight before admission she was operated on for adenoids. Two years previously she had suffered from jaundice and was very languid, and complained of slight pains in the upper part of the abdomen. The attack lasted two months and was not attended by fever or other special symptom. Nine months later there was another attack of the same duration. Forty-two days before death jaundice appeared and increased in intensity. Bile pigment was present in the urine. The bowels were constipated and the motions pale; the temperature was regularly slightly subnormal. There was occasional dull pain and tenderness over the epigastrium; the weakness increased, but there was no other special symptom. There was no vomiting and the appetite was good. The child was admitted to the Royal Hospital for Sick Children under Dr. John Thomson five days after the jaundice developed. On admission the liver was somewhat enlarged, reaching 1 in.

below the costal margin. It felt smooth and rather firm; later the margin became slightly irregular. The spleen was also slightly enlarged. There was no ascites. On the twenty-third day of jaundice laparotomy was performed for possible gall-stones. The gall-bladder and bile-passages were healthy. The liver was not enlarged, but normal or slightly reduced in size. It was smooth and red-brown in colour. There were many bright green nodules on the surface of the size of a pin's head to a walnut, sharply defined and softer than the surrounding tissue, which was hard. The child died twenty-two days after the operation. At the autopsy the liver was slightly reduced in size and showed the same appearance as at the operation. Inside the organ were many well-defined green nodules, about half an inch in diameter. Microscopically these nodules showed extreme hyperplasia of the liver-cells. The nodules were ill-defined and irregular in outline. Some of the liver-cells were small, single nucleated and closely packed together; these were probably young newly-formed cells. Other cells were hypertrophic with two or more nuclei, and there were also giant liver-cells with thirty or more typical liver-cell nuclei, apparently an expression of regeneration. The tissue between the nodules was composed of young cellular fibrous tissue, with a few "bile-ducts." In some places the outlines of the destroyed lobules could be recognised. These were composed of dilated capillaries, generally more or less collapsed and overgrown by fibrous tissue, developed from the region of the portal tract. No elastic fibres could be seen in the fibrous tissue, such as are found in old-standing cirrhotic livers.

CASE 4 (M'Donald and Milne) (2) (8).—Boy, aged 6 years. Thin, but well developed; previously quite healthy. He suffered from progressive jaundice and had got thinner and weaker for eight weeks. He died suddenly without the jaundice having become very intense and without any other special symptoms. He was only under observation for six days, during which the liver remained of normal size to percussion. At the autopsy the liver was uniformly slightly reduced in size; the surface was smooth and of a red-brown colour. Scattered irregularly over its surface were yellow areas of the size of a pin's head to 3 in. in diameter; they were slightly raised, fairly well defined, and of softer consistence than the surrounding fairly firm red-brown tissue. In the interior of the liver were irregular yellow masses, $\frac{1}{4}$ to 1 in. in diameter in considerable numbers, some well defined, others with margins merging into the surrounding tissue. The microscopic appearances were very much the same as in the previous case, and the dilated capillaries were well marked. The authors say: "The appearances indicate very widespread, rapid destruction of the organ, and that compensatory regenerative changes had taken place by a multiplication of the preserved liver-cells and produced the yellow areas."

CASE 5 (M'Donald and Milne) (3) (8).—Girl, aged 7 years. She had been out of sorts for two months, and for three and a half weeks had become progressively more jaundiced; she died in a state of delirium with high temperature. At the autopsy the liver was slightly enlarged and bile-stained. There were numerous small projecting yellowish nodules scattered irregularly through the organ and elevated above the surrounding pinkish-grey tissue. Inside the liver these areas were fairly well defined and separated by wide areas of pale pink-grey tissue. The yellow areas were composed of liver-cells in active proliferation, somewhat degenerated. There was marked evidence of hyperplasia; the intervening fibrous tissue was very young, and showed large numbers of bile-ducts.

CASE 6 (Shennan, reported by M'Donald and Milne) (8).—Boy, aged 7 years. Till four years old he had been quite healthy; since then he had been getting gradually weaker. A year before death it was noticed that the abdomen was somewhat swollen; the ascites to which this was due had increased steadily in the last few months. For the last four months he had suffered from intermittent abdominal pain and diarrhoea. There was no obtainable history of jaundice, but during the three days he was in

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hospital before he died there was an evident yellow colour of the sclerotics. Before death the liver was slightly enlarged. He died feverish, but with no increase of the slight jaundice. At the autopsy there was a considerable amount of fluid in the peritoneum and thorax. The mesenteric glands were enlarged and pale pink in colour; the spleen was congested, and the kidneys pale and showed cloudy swelling. The liver was somewhat enlarged, and weighed 930 grms.; it was greyish in colour with a slight yellow tint; irregularly scattered throughout the organ and projecting above its surface were numerous soft nodules of an orange-yellow colour. They varied in size from a pin's head to a small nut, and were sharply and regularly defined. Microscopically the isolated areas were composed of densely-packed liver-cells of very varying shape and size, and no lobular structure was to be observed. The intervening tissue was fibrous and not particularly dense in character, and contained very numerous irregular bile-ducts.

CASE 7 (Dingwall Fordyce) (2).—Girl, aged 6 years 11 months. She had suffered from an attack of jaundice a year before, and since then from occasional pain in the left side of the abdomen. Seven weeks before admission she began to look ill and was kept in bed; since then the abdomen had become swollen, and pain was occasionally present. The rate of increase in the size of the abdomen had been greater for the two weeks before admission. Four days before admission the child was very tired and complained of headache, and next day the pain was worse, and there was vomiting with watery diarrhoea. The vomit then became bilious, and no motion was passed after the middle of the day before admission. There were no fits, but some twitching and screaming, and the child was comatose. On admission the nutrition was fair; the child was comatose with a dusky sunken face; there was no distinct jaundice, but the skin was sallow. There were œdema of the back, paresis of the left leg and the left side of the face, and a squint. The temperature was 99° F. The abdomen was very tense and distended; there was dulness in the flanks and a thrill. The liver and spleen were not palpable. A catheter specimen of urine showed a trace of albumin. At the autopsy there was a small amount of fluid in both pleura, and clear bile-stained fluid in the peritoneum. The spleen showed old-standing venous congestion. The liver was very reduced in size; the surface was grossly irregular, and showed well-marked yellow coloured nodules of $\frac{1}{4}$ to $\frac{1}{2}$ in. in size, projecting above the greyish-pink substance of the organ. These yellow areas were clearly defined, and pervaded the interior of the organ. The substance between the yellow areas was greyish-pink in colour and very firm. Under the microscope the yellow areas showed liver-cells with a marked degree of hyperplasia; the grey tracts contained very few liver-cells, and were made up of fibrous tissue with numerous bile-ducts.

CASE 8 (Rolleston) (14).—Boy, aged 4½ years. One other child was stillborn, and the mother had had two miscarriages. The patient suffered from jaundice for five weeks and ascites for two weeks before death, with hæmorrhages; 700 cc. of turbid ascitic fluid were withdrawn two days before the child died in coma. At the autopsy the liver weighed 375 grms.; the surface was irregular. On the left lobe was a raised area of the size of a florin. On section the liver was somewhat tough. Microscopically the appearances were those of acute yellow atrophy with regenerative changes in the area in the left lobe. There was also acute enteritis.

CASE 9 (Porter Parkinson) (13).—Boy, aged 3 years. Admitted to hospital November the 19th, 1913. He had suffered from measles a year previously. Three weeks before admission there was a rigor followed by fever. Jaundice and drowsiness began three days before admission. On admission the boy was well-nourished; there was marked jaundice, and the stools were pale. The liver was enlarged, reaching 1 in. below the costal margin. The spleen was just palpable. The urine contained much bile, but no leucin or tyrosin. The temperature was normal, but rose to 103 on

November the 28th, and remained high for five days. On December the 12th there was friction at the base of the right lung, and the liver reached to the umbilicus, but then began to lessen in size and continued to do so till death. The jaundice persisted. On December the 28th a blood culture showed the presence of staphylococcus albus, which may, however, have been a contamination. There was some œdema of the hands and feet; there were no nervous symptoms. The temperature rose to 103 on December the 23rd, and continued high till death on December the 31st. Post-mortem the lungs showed numerous septic infarcts of the size of a pin's head. The peritoneum contained 170 cc. of yellow fluid. The liver was slightly enlarged and of pale brownish-yellow colour; there was plastic peritonitis round the portal fissure. On section the liver showed areas of a yellow colour, mingled with areas of reddish colour, sharply defined and hard. The spleen was pale, and contained one septic infarct. The kidneys were pale, with small septic infarcts. The abscesses in the lungs contained staphylococci, as did the vessels of the kidney. Under the microscope the red areas in the liver showed young connective tissue, with many dilated capillaries; scattered among these were bile-ducts, and some scattered liver-cells some of which were markedly hyperplastic and of the giant cell type, while some showed signs of degeneration. The yellow areas were composed of liver-cells in lobular arrangement, some showing hyperplasia, but many fatty and degenerating.

Taking the cases as a whole the justification for separating them as a group from the acute form of the disease, between which and cirrhosis of the liver they form a connecting link, is partly clinical and partly pathological; clinically the distinction lies in the greater duration of the case and the less violent nature of the symptoms; pathologically in the evidences of the attempts at repair that we find in the liver. As Milne (11) points out, both the subacute and the acute types start as an acute general necrosis of the liver parenchyma; in the latter the process is so severe that the patient dies before repair can be attempted; in the former the attempts at repair and regeneration of the liver parenchyma are evident in the hyperplasia of the liver-cells and the formation of new bile-ducts.

Of the nine cases here collected five were girls and four were boys, so that, unlike the acute form of the disease which is commoner in females than in males, there was no marked inequality of sex distribution, but of course the number of cases is very small.

Symptomatology.—Apart from Klopstock's case, which stands by itself in that the liver condition gave rise to no symptoms during life and was only discovered at autopsy, jaundice was present in every case and was usually the first symptom to attract attention. It varied in degree from the deep icterus of Case 1 to the evident yellow colour of the sclerotics of Case 6 and the sallow skin of Case 7, in which the presence of jaundice was only rendered certain by finding bile-stained fluid in the peritoneum after death. It is of interest that the changes in the liver in these two latter cases bore a nearer resemblance than did those seen in any of the other cases

in the series to the changes found in ordinary multilobular cirrhosis, in which disease jaundice of a marked degree is an uncommon event. On the other hand, in Case 1, in which the jaundice was deep, the liver picture was that of acute necrosis attacking a liver previously affected with subacute necrosis. It would appear, therefore, that the depth of the jaundice is more or less proportional to the acuteness of the changes in the liver. The jaundice when once established usually tended to become progressively deeper. In Cases 3 and 7 there was a history of previous attacks of jaundice, a sequence of events which has been recorded by Wentworth (17), and others in cases of the acute type of the disease in children. The possible significance of this history will be referred to later.

Ascites were present in Cases 6, 7 and 8. In two of these cases the changes in the liver were of the chronic type, approaching the cirrhotic, and the regenerative processes were widely diffused through the organ, while in the third case, No. 8, regeneration was limited to a small area in the left lobe, and the rest of the organ showed the microscopic picture of acute yellow atrophy. In none of the reports of these three cases is there mention of the condition of the portal vein or its branches.

The liver was somewhat enlarged at some period of the disease in all except Case 4, where it was normal to percussion, but slightly reduced in size at the autopsy, and Case 7, where it was not palpable during life and was very reduced in bulk after death. In Case 8 there is no note as to the size of the organ during life, but after death it was small. The enlargement was not always to be detected during life; it was usually regular, but in Case 1 the left lobe was more affected than the right, and in M'Donald and Milne's first case the margin, which was regular at first, later became somewhat irregular. Progressive diminution in size, which is such a marked feature in the acute type of the disease, and of considerable diagnostic importance, was noted in Cases 1 and 9, and in both cases the diminution followed a previous increase in size. In Case 3 the liver was enlarged to palpation on admission, but at the subsequent operation, eighteen days later, it was found to be normal or slightly reduced.

The spleen was noticed to be slightly enlarged in Case 3, just palpable in Case 9, and not palpable in Case 7. In the other cases there is no note of its condition during life.

Of the more general symptoms abdominal pain was of inconstant occurrence. Its absence is expressly recorded in Case 1, while in Cases 3, 6 and 7 it was present with intermissions, and was never

very severe in character. Vomiting was recorded in Case 1, in which it was severe, and also in Case 7, and was expressly stated to have been absent in Case 3. Light-coloured motions were the rule, but neither diarrhoea nor constipation were marked features of the series. Hæmorrhages, which are so notable a symptom in the acute form of the disease, were only seen in two of the cases, 1 and 8, in which, while regenerative changes were present in the liver, acute necrosis predominated. The temperature was noted as regularly and slightly subnormal in Case 3, high in Cases 5 and 6, normal in Case 7, and irregular in Case 9, in which, however, there was also present a general staphylococcal infection. The high temperature, therefore, which is usually seen in the acute type of the disease, falling towards the end, is often absent in the more chronic cases. Nor are the nervous symptoms nearly so pronounced in the latter as in the former.

Drowsiness with death in coma was seen in Case 1 and also in Case 7, while delirium was a terminal symptom in Case 5. Screaming and twitching, followed by coma with localised paresis of the face and leg on the left side, are recorded of Case 7, but nervous symptoms were expressly noted as absent in Case 9, and in none of the cases do they appear to have been very prominent.

In all cases where it is alluded to the urine contained bile; leucin and tyrosin, so often found in the acute type of the disease, were noted as absent in Case 9, and in the other cases no mention is made of them.

Taking the symptoms as a whole there is a more or less regular gradation from cases such as 1 and 8, in which the picture closely resembles that seen in definite acute cases of the disease, with deep jaundice, hæmorrhages, severe vomiting (Case 1) and coma, and progressive diminution in the size of the liver, the chief sign of the subacute nature of the case being the long persistence of the jaundice, to cases such as Dingwall Fordyce's (2), marked by very slight jaundice, ascites and œdema, in which the clinical aspect of the case is very much that of ordinary multilobular cirrhosis of the liver.

A similar transition is seen in the pathological appearances. For instance, in Case 8 the only point in which the liver differed from the liver of typical acute yellow atrophy was in the presence in the left lobe of a small area showing regenerative changes. In Case 7, on the other hand, there were many areas showing regenerative hyperplasia with fibrous tissue intervening, and the microscopic picture was nearly that of a cirrhosis of the ordinary type, but the regenerative changes were more widespread and pronounced than is

usual in that disease. In Case 9, which, thanks to the courtesy of my colleague, Dr. Porter Parkinson, I had the opportunity of observing both during life and after death, necrotic and regenerative changes were closely intermingled. In places the necrotic changes had proceeded so far that the liver-cells had almost entirely disappeared, leaving a network of capillaries enclosing a few liver-cells of a degenerative type, while in other places regenerated liver-cells of the hyperplastic type were very prominent, though many even of these showed signs of necrosis. Clinically as well as pathologically the case occupied an intermediate position between the acute necrotic and the cirrhotic types of the disease. The regenerative changes have been studied among others by MacCallum (7), Muir (12) and Milne (11). The origin of the regenerated liver-cells is probably twofold; they may arise from pre-existing liver-cells or from the epithelium of the bile-ducts, which is gradually transformed into liver parenchyma. The tendency is for them to be collected together into masses of an ill-defined structure, resembling the adenomata, and it is probable that some of the cases reported as cirrhosis of the liver with adenoma formations are really examples of subacute atrophy. As to the ætiology of the disease, the present series of cases throws very little light on the point. Micrococci and bacteria have been found by Klebs (4) and by Dreschfeld (3) in acute cases of yellow atrophy of the liver, but their causal relation to the disease is at least uncertain. Cocci were present in the liver in Case 9, but as the patient was suffering from staphylococcal septicæmia their presence throws no light on the origin of the condition of the liver. The obstetric history of the patient's mother in Rolleston's case is somewhat suggestive of the presence of syphilis, but on the other hand in a series of sections from various parts of the liver of Case 9, stained by Levaditi's method, I failed to find a single spirochæte. Klopstock, in discussing the question in his case, is also against the syphilitic origin of the disease. Probably the condition is due to some acute infection the nature of which is at present entirely unknown.

A series of cases such as the present in which all the patients died, while valuable from the pathological point of view, obviously shed no light on the prognosis of the disease; but this is by no means to say that cases of subacute atrophy of the liver are invariably fatal. Indeed, Klopstock's patient died from a cause in no way connected with the condition of the liver, though that organ showed typical subacute atrophic changes. In the acute form of the disease there are several well-authenticated cases of recovery.

Wickham Legg (6) in 1880 collected twenty-eight cases of reputed recovery, and in two cases of the closely allied condition of malignant jaundice in pregnancy Creed and Scot-Skirving (1) reported two cases which recovered, both of which presented the classic signs of the disease, and in one of which leucin and tyrosin were found in the urine. Though therefore I can find no recorded cases of recovery in subacute atrophy, there seems but little doubt that such do occur; occasionally one meets children with cases of jaundice which at first appear to be merely of the catarrhal type, but in which the icterus persists longer than is usually the case in that complaint, while the constitutional symptoms are more pronounced. It seems legitimate to suppose that some at least of these are non-fatal cases of subacute atrophy. Further, the fact that certain of the cases in the series gave a history of previous attacks of jaundice raises the question whether such attacks were catarrhal or whether they were really instances of subacute atrophy which became quiescent but recurred in the final and fatal attack. Such attacks occurred in Cases 3, in which the history was peculiarly suggestive, and 7; in both the appearances found in the liver were not inconsistent with the possibility in question, for they obviously indicated a change of some duration. But if cases of subacute atrophy may recover, what is their ultimate fate? Possibly the liver may be restored to a normal condition, though this seems improbable; but when fibrous tissue is formed to the extent found for instance in Case 9 it is obvious that complete restoration to the normal cannot take place. Such fibrous tissue tends to supplant the more highly-developed liver parenchyma, and the ultimate picture would be one of a coarse, somewhat irregular, cirrhosis, such as that described by Marchand (9) under the name of multiple lobular hyperplasia, which in his case he regarded as the result of an attack of acute yellow atrophy six months previously. Now the aetiology of multi-lobular cirrhosis in children is obscure; alcohol is responsible for a certain number of cases, syphilis for some, and some have their origin in the acute infectious diseases, but I would suggest that a certain proportion of the remainder, for which no obvious cause can be found, take their rise from a previous attack of subacute atrophy of the liver.

As the disease presents a series of gradations between declared acute yellow atrophy of the liver and cirrhosis, the diagnosis must obviously be at times difficult or almost impossible. From the former the differentiation depends on the longer history and the less acute nature of the symptoms; the presence of ascites would

also be of value (Case 8), while the presence of jaundice of any considerable degree and the alteration in the size of the liver while the patient is under observation, both of which signs are unusual in cirrhosis, though the latter is more often seen in the juvenile than in the adult type of the disease, would help to differentiate the case from that condition. In the case which I had the advantage of watching, No. 9, the presence of jaundice, and the increase in size of the liver, followed by its diminution, rendered the diagnosis of subacute atrophy extremely probable, but the case both clinically and pathologically occupied an intermediate position, and there was therefore less likelihood of confusing it with either acute atrophy or cirrhosis. In cases where considerable ascites is present, differentiation from tuberculous peritonitis might cause a difficulty, but the presence of even a slight degree of jaundice would be against the latter disease, in which jaundice is a rare event. From catarrhal jaundice it is to be distinguished by the greater severity of the symptoms, the gradual progress downhill and the gradually increasing depth of the jaundice. In syphilitic cirrhosis of the liver jaundice is not a prominent feature, and the course of the case is very slow, while the presence of other signs of syphilis and of a positive Wassermann reaction would help to differentiate the case from one of subacute atrophy.

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FATAL HÆMOPTYSIS IN A CHILD AGED 4 YEARS.*

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A BOY, aged 4 years, was admitted to the Grove Fever Hospital on February the 19th, 1914, certified to be suffering from whooping cough. Measles, in December, 1912, was stated to be the only previous illness, but since November, 1913, he had appeared generally unwell and subject to attacks of abdominal pain and vomiting.

Condition on admission: The child was in a very ill-nourished and wasted state. The cough was paroxysmal, but at no time during his stay in hospital was he heard to whoop. Rhonchi and râles could be heard all over both lungs, but no areas of dulness could be marked out. The abdomen was distended and the superficial abdominal veins were dilated. The spleen could be palpated below the level of the costal margin and the area of liver dulness was slightly increased downwards. No enlargement of the lymphatic glands was detected. The temperature rose nightly to between 102° and 103° , but fell to nearly normal in the morning. The pulse-rate was rarely below 120 and the respiration varied 30 and 50.

On March the 15th a specimen of sputum was with difficulty obtained from the mouth, but no tubercle bacilli were seen. Von Pirquet's reaction, performed on April the 3rd, was also negative, a fact which is of interest in view of the subsequent post-mortem findings. (A positive reaction, however, was found in the patient's sister, aged 2 years, who was admitted on the same day with the certificate of whooping cough, and died on May the 21st of tuberculous meningitis—a terminal episode of what was probably a generalised infection. An autopsy could not be obtained, but three days before death some cloudy cerebro-spinal fluid was obtained on which Dr. Cartwright Wood, Bacteriologist to the Board, reported as follows: "We killed two guinea-pigs, inoculated with the cerebro-spinal fluid, and found both animals markedly affected with tuberculosis. We were able to demonstrate the presence of tubercle bacilli in the caseous material at the site of injection.")

A differential blood-count on April the 14th showed: Polymorphonuclears, 54 per cent., small mononuclears, 40 per cent., large mononuclears, 6 per cent. Very little change occurred in the child's general condition, but on April the 13th impairment of resonance

* A paper read at the Section for the Study of Disease in Children of the Royal Society of Medicine, on May the 22nd, 1914.

was noted below the left ninth rib behind and extending round into the left axilla; over this area the breathing was bronchial in character. During the evening of April the 24th a very little blood-stained sputum was expectorated, and at 8.30 p.m. on the 25th, after a comfortable day during which the child seemed rather brighter than usual, a sudden copious hæmoptysis occurred, death ensuing almost immediately.

Necropsy, April the 26th.—On pressing on the trachea and œsophagus a quantity of dark blood was expelled from the mouth and nostrils. The tracheo-bronchial glands were much enlarged, obviously tuberculous and some of them caseating. The left pleura was thickened and firmly adherent to the chest-wall and diaphragm. The upper lobe of the left lung was studded with tuberculous deposits. The lower lobe was solid, small pieces of it sinking in water, and presented a cavity about the size of a walnut, completely filled with recent blood-clot. The whole of the right lung was a mass of tuberculous nodules. The liver was enlarged, fatty and studded with tubercles. The spleen was considerably enlarged and contained tuberculous deposits of a fair size. Tubercles were also seen in the kidneys, basal meninges and grey matter of the cerebral cortex. The heart was empty and normal in size and appearance. The mesenteric glands were enlarged and the stomach contained a large quantity of altered blood but showed no sign of any lesion in the mucous membrane.

This case is of interest in the first place as being an example of general tuberculosis with the primary focus in the tracheo-bronchial glands producing a paroxysmal cough, simulating whooping cough, and in the second place owing to the rarity of hæmoptysis in so young a child. Although, as in seven out of twenty-three cases collected by Meusnier which came to autopsy the actual bleeding vessel was not definitely identified, it is presumable that the hæmoptysis occurred through the rupture of a branch of the pulmonary artery into the cavity found in the left lower lobe. Death was ascribed to asphyxiation rather than to the amount of blood lost.

A somewhat similar case occurred at the same hospital nearly three years previously. A boy, aged 4 years, was admitted with the certificate of whooping cough on June the 8th, 1911. His cough was sometimes paroxysmal, but no whoop occurred during his six months' stay in hospital. The signs and symptoms were those of chronic pulmonary tuberculosis, and the paroxysmal cough suggested affection of the tracheo-bronchial glands. Von Pirquet's reaction performed on July the 19th was positive. Two attacks of

profuse hæmoptysis occurred on December the 20th, and death took place on the same day. No autopsy could be obtained.

Meusnier (3) in 1892 collected thirty-three cases of hæmoptysis in children aged from 8 days to 14 years, but only sixteen of these were in children under 5 years. Of these sixteen all but three were tuberculous and all but one—a case of influenzal bronchitis—were fatal. The other two non-tuberculous cases occurred in new-born infants, in one of whom the lungs seem to have been digested by the inspiration of gastric juice during vomiting, while in the other the hæmoptysis was due to pulmonary thrombosis of syphilitic origin.

Magruder (2) in 1908 described a case in a negro boy, aged 3 years, very similar to our own, and referred to four other cases aged from 7 months to 3½ years, in which fatal hæmoptysis was due to pulmonary tuberculosis. Other cases of fatal hæmoptysis in children due to pulmonary tuberculosis have since been reported by Brown (1) in a girl of 3 years and by Thomas (5) in an infant of 3 months. It would thus appear that hæmoptysis occurring in young children is in the majority of cases due to pulmonary tuberculosis. It is as a rule a sudden and fatal event. In only five of Meusnier's twenty-nine fatal cases had the terminal hæmoptysis been preceded by any spitting of blood. In this respect the slight premonitory hæmoptysis which occurred in our case was exceptional.

The hæmorrhage may be caused by the rupture of an aneurysm or of a branch of the pulmonary artery into a cavity within the lung, either in the apex or the base, or by the breaking down of tracheo-bronchial glands surrounding a vessel and causing its rupture into a neighbouring bronchus. The fact that the mouth, pharynx and lower air-passages are as a rule filled with blood, demonstrates the mode of death in these cases. The stomach is generally found to contain much blood, suggesting at first sight hæmetemesis, but no lesions can be detected in the mucous membrane. Other causes of fatal hæmoptysis in children besides tuberculosis may be gangrene of the lung, ulceration of the neck-vessels in scarlet fever, or gangrenous angina or hæmorrhage in ulcerative sore throat, an example of which was reported by one of us to this section during the last session (4).

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- (4) ROLLESTON, J. D.—'Brit. Journ. Child. Dis.,' 1913, x, p. 66.
- (5) THOMAS, E. H.—'Brit. Med. Jour.,' 1909, i, p. 1356.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, May the 22nd, 1914.

Mr. SYDNEY STEPHENSON, *Vice-President of the Section, in the Chair.*

Case of Mongolian Imbecility.—Dr. J. J. M. SHAW.—A boy, aged 3 years, born at full time. Labour was slow, and the child, which weighed 10 lb., was almost asphyxiated. The mother was aged 34 years when this her only child was born. There was a history of tuberculosis on the maternal side. Head brachycephalic, and fæces characteristic. Complexion florid, epicanthic folds large, and lips fissured. Little fingers incurvate, and toes, although presenting no abnormal cleft between the great toe and the next, unusually mobile. The child was very good-tempered and far from shy. His speech was very defective, and his code of gestures and strange noises were unintelligible except to his parents. Dentition did not commence until the age of 16 months, and his cry was that of an infant.

Spina Bifida Occulta.—Dr. ERIC BELLINGHAM SMITH.—Boy, aged 9 years, was brought to the hospital for incontinence of urine. On examination the bladder was found to be distended as high as the umbilicus, and there was a constant dribbling of urine from the penis. The chief feature of interest, however, was the condition of the buttocks. These were flattened at the back, buttocks and posterior surfaces of the thigh presenting a practically level surface. The vertical cleft was entirely absent, and the anus was exposed and appeared to look directly backwards. There was a weak gluteal fold. The prominences of the trochanter and tuber ischii were well marked, and there was a cavity between them which was only filled by skin and fascia. Deep to this the deep external rotators of the thigh could be palpated, but the whole of the superficial gluteal muscles were absent. The muscles on the anterior and posterior aspects of the thigh were distinctly hypertrophied. The calf muscles seemed to be smaller than normal. This defect was, however, more apparent than real, and was probably produced by the marked hypertrophy of the thigh muscles above. The condition was absolutely symmetrical, and there was no affection of the trunk or arm muscles. The defect produced no disabilities. The child could run, walk and rise readily from any position in which he was placed. There had been no progressive wasting, and the condition had existed since birth. He had never exhibited any control of his urine since babyhood, and from time to time there had been incontinence of fæces. The reflexes were present and normal, and the mental condition was average for the age.

Congenital Defect, Sixth and Seventh Cranial Nerves.—Dr. ERIC BELLINGHAM SMITH.—Boy, aged 3 years. Brought to hospital for weakness of one side of face. This defect had been noticed since second week of life. Delivery was moderately easy, and no instruments were used. There was complete seventh nerve paralysis on right side, and also paralysis of right external rectus. The condition suggested congenital defect of the sixth and seventh cranial nerves.

Osteoperiostitis of the Tubercle of the Tibia.—Mr. CHAD WOODWARD.—Girl, aged 11 years, had complained of pain over the tubercle of the left tibia for six months; as she grew tired the pain became worse. There was an obvious swelling over the tubercle and tenderness was especially marked on the inner side.

Injury to the Deep Branch of the Ulnar Nerve.—Mr. CHAD WOODWARD.—C. L., aged 15 years, fell on to a spike in June, 1913, and wounded his left wrist and palm. The wound was infected and healing occupied some weeks. There was paralysis of the interossei, ulnar lumbricales, and adductors of the thumb. Owing to the absence of sensory changes this lesion was prone to be overlooked at the time of the injury.

Old Injury to Elbow.—Mr. CHAD WOODWARD.—Boy, aged 7 years, fell on a stone in August, 1913. Was treated with a splint for "fracture of a small bone and a bone out of place." All movements were now remarkably free, but the arm was very weak. The skiagram showed an anterior dislocation of the radius and the site of fracture of the ulna.

Case of Tremor.—Dr. F. LANGMEAD.—Girl, 7½ years, with a peculiar tremor of the upper extremities. It was not associated with any evidence of disease in the nervous system or elsewhere. It was shock-like in character and brought on by volitional movement. It was first noticed when she was 7 months old, and there was no history of it having followed an acute illness. It was probably congenital. There was no record of it occurring in other members of the family.

Case of Abnormal Development and Fragility of the Bones.—Dr. LANGMEAD.—Boy, aged 9 years 7 months, had always been backward mentally. He sat up at the age of 2 years 9 months, walked first when aged over 3 years, and was said to have begun to talk at the age of 1 year 6 months. His mother was afraid to let him out by himself as he was inclined to run without reason into traffic. He lay awake at night for several hours on end, but did not appear to be frightened and could not explain his wakefulness. He was extremely nervous. He had broken his arm on two occasions: when aged 4 and again when aged 7 years. The fractures were easily produced and occasioned by only very slight falls.

His limbs were long and thin, as also were his fingers and toes. Eyes somewhat staring and lids a little retracted. Both testicles had descended. Urine: Specific gravity 1008-1012, no albumen or sugar. No increased frequency of micturition. Pulse not easily felt; arteries not thickened. Blood-pressure 130 mm. Hg.

Specimen of Hydatid Cyst of the Brain.—Dr. C. PAGET LAPAGE.—A boy, aged 10 years, after an injury to the head developed signs of cerebral tumour (optic neuritis, headache and vomiting) but no definite localising signs. A history of supposed tuberculous illness suggested that the tumour was tuberculous and definite improvement seemed to follow treatment with tuberculin. Later, localising signs—weakness and tremor of the right arm and leg and face—together with convulsions, developed. An exploratory operation was then performed. On incising the dura a large amount of clear fluid escaped; no brain matter could be seen, but the wall of a very large cyst presented at the opening. A small drainage tube was

left in, and through this large amounts of cyst-wall and clear fluid came away. Hernic cerebri and meningitis developed and death took place three weeks after the operation. No necropsy. Examination showed that the cyst was a hydatid.

Reference was made to the case reported by Henry Ashby in *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1904, I, p. 51.

The following papers were read:—**A Familial Case of Splenomegalic Anæmia with Infantilism.**—Dr. F. PARKES WEBER (*vide* p. 345). **Nervous Cretinism.**—Major R. McCARRISON, I.M.S. **Fatal Hæmoptysis in a Child, aged 4 Years.**—Dr. J. D. ROLLESTON and Mr. J. E. ROBERTSON-ROSS (*vide* p. 407).

CLINICAL SECTION.

Friday, May the 8th, 1914.

Spleno-myelogenic Leukæmia.—Dr. CLIVE RIVIERE.—Boy, aged 12 years, admitted to City of London Chest Hospital on December the 6th, 1913, with history of cough, breathlessness, pain in right shoulder, and general weakness of one year's duration. He then showed good nutrition with somewhat plethoric aspect, spleen to umbilicus, liver 1 in. below costal margin. Signs of enlarged thoracic glands, mainly consisting of increase of oval interspinous dulness on right side and impairment at lung apex. A skiagram confirmed this. Urine contained much albumen.

BLOOD-COUNT (DECEMBER THE 9TH).

Red cells	2,920,000
Leucocytes	167,000
Hæmoglobin	55 per cent.
Colour index	0·9
Differential count:	
Polymorphonuclear neutrophiles . .	43·0 per cent.
„ basophiles	5·0 „
„ eosinophiles	4·0 „
Lymphocytes, large	1·5 „
„ small	2·5 „
Myelocytes, neutrophiles	42·5 „
„ eosinophiles	1·5 „

December the 13th. Put on liq. arsenicalis 3 mm., rising to 4 mm., and on December the 30th leucocytes had fallen to 137,000 per cubic millimetre.

On January the 9th, 1914, transferred to East London Children's Hospital so that X-ray treatment could be tried. After the first two doses a hard tube and aluminium filter were used.

Jan. the 14th . Leucocytes . 328,000	} Between January the 14th and February the 28th six X-ray doses of $\frac{1}{2}$ B Sabouraud applied to the spleen.
„ the 16th . „ . 279,000	
„ the 21st . „ . 256,600	
Feb. the 5th . „ . 362,200	
(Myelocytes 56 per cent.)	

Feb. the 13th . Leucocytes . 372,000	}	Between February the 6th and February the 27th X-rays in similar doses applied twice weekly to right and left leg alternately.
„ the 23rd . „ . 310,000		
Mar. the 3rd . „ . 334,000 (A few nucleated reds seen for first time)		
Mar. the 16th . Leucocytes . 349,200	}	Between March the 3rd and April the 20th benzol given in doses of 2 mm. rising to 6 mm. in petroleum emulsion.
Apr. the 20th . „ . 400,800		
Apr. the 26th . Leucocytes . 425,000	}	On April the 20th put back on liq. arsenicalis 3 mm., rising by April the 30th to 6 mm.

The red cells on January the 14th were 4,480,000 and the hæmoglobin 72 per cent., and they had remained much the same since. During the time the boy had been under observation he had felt well, had gained 6 lb. in weight, and his temperature had kept within normal limits. The pulse was accelerated, about 116. The liver had remained unaltered, but the spleen had increased in size both downwards and forwards. The area of lung impairment, indicative of large chest glands, had also increased, and now extended between the first and ninth dorsal spines on the right side. The last full differential leucocyte count obtained (April the 20th) was as follows:

Polymorphonuclear neutrophiles . . .	28.5 per cent.
„ eosinophiles . . .	2.0 „
Lymphocytes, large . . .	3.5 „
„ small . . .	3.5 „
Transitionals . . .	12.5 „
Myelocytes, neutrophiles . . .	39.0 „
„ eosinophiles . . .	6.0 „

Two megaloblasts and one normoblast seen among 200 cells counted.

Philadelphia Pediatric Society.

May the 12th, 1914, WILLIAM N. BRADLEY, M.D., President.

Spina Bifida.—Dr. JAMES K. YOUNG presented an eight months' old child, cured by operation. The tumour was large and sessile, complicated by partial paralysis of both lower extremities and bilateral equinovarus. It was a multilocular meningocele, had ruptured at birth and was not infected. At six months, it was removed by dissection; the patient was suspended by the feet, two ounces of fluid were removed before operation, kept warm, and re-injected at the close of the operation. The sac was tied off by a through and through suture and purse-string suture, the wound protected by rubber dam attached by collodion. The patient was kept on the face for two weeks, enemata being given every five hours to secure evacuation of the bowels. Primary union was secured without infection and the baby was now well.

Dr. J. J. HAMMOND thought that surgeons must be interested in any operation that could cure spina bifida. He had recently observed a boy,

aged 10 years, under-weight and under-developed, with talipes equinovarus of the right foot, some muscular weakness of both legs and impaired function of the sphincters of bladder and rectum. The boy was of the type which tended to spontaneous cure, as no other would have survived so long and retained such a fair degree of development. The growth had a circumference of $3\frac{1}{2}$ in., the greater part of which was indurated tissue overlying the actual cyst, which was about the size of a black walnut. The cleft involved the fourth and fifth lumbar vertebræ and proved to exist at the expense of the laminæ and spinous processes. Ample bony canal was exposed below the cyst, into which the cauda equina was replaced and retained without harmful pressure. The gap in the spine was closed by transplanting bone and the soft tissues brought together over it. Recovery was without incident, the boy leaving the hospital on the 21st day. The X-ray showed the transplanted bone united in perfect position, completely closing the cleft.

Dr. J. P. CROZER GRIFFITH dwelt upon the diagnostic and prognostic indications of the different forms of spina bifida. The spinal meningocele, in which spinal meninges and fluid were contained, but without spinal cord, offered by far the best prognosis, lending itself most readily to operative interference. In the myelocystocele the cord was nearly always present, spread out upon and forming part of the wall of the tumour. The prognosis was grave, even after operation; even cases which survived operation were liable to retain evidence of paralysis. If he understood Dr. Young correctly, the central spinal canal communicated with the tumour in this case and this would put it in the class of myelocystocele.

Dr. YOUNG stated that the child had double equinovarus. It was not a simple cyst, but a large multilocular cyst which had ruptured. He found an opening directly communicating with the spinal cord, which he was able to close. The mortality in these operations was about 87 per cent. in selected cases.

Some Points of Contact between Tuberculosis Work and Pædiatrics.—Dr. WILLIAM CHARLES WHITE, of Pittsburg, read this paper by invitation. He first referred to the problem which all branches of the medical profession must face in the growth of the paternalising governmental dominance of public health problems, and of the necessity for the various departments of the profession doing medical work for the public to correlate their forces and utilise these in the interest of the public welfare, so that when governments came to the point of complete care of the dependent and insured, they would find the medical profession far ahead of anything they could hope to attain. In this way the medical profession would retain its proper birthright—the care of the health of the people. Dr. White pointed out the well-known facts of the frequency of tuberculous infection in childhood, taking up the source of infection occurring from midwives during the first days of life, advocating a movement to procure medical examination of midwives, since they came into such intimate contact with the new-born. He spoke of the health of nurses, citing instances where the undoubted source of tuberculous infection in children could be traced to a nurse-girl or servant. Physicians must be sure that those to whom children were entrusted were not suffering from tuberculosis. He spoke of the common ground which pædiatrists and tuberculosis workers had in securing a municipally pasteurised milk supply; the relation of various infectious diseases as a groundwork on which the tubercle bacillus built its most virulent

infections ; the lowered resistance to other diseases of children coming from tuberculous parents ; the relation of tuberculosis to certain skin and eye conditions in childhood ; and ended by urging that pædiatrists, tuberculosis workers and others interested in the public health should draw more closely the line of correlation which bound them together.

The Diagnosis of Chronic Tuberculosis in Early Life. — Dr. H. R. M. LANDIS did not consider acute tuberculosis, tuberculous meningitis, the acute broncho-pneumonia form following infectious diseases or surgical tuberculosis. The attitude of the various observers determined whether the recognition of tuberculosis in children was easy or difficult. Children of a tuberculous parent giving a positive tuberculin reaction or showing palpable cervical lymph-nodes had all been considered tubercular. Admitting that tuberculosis was commonly acquired in childhood, it by no means followed that this invariably occurred. Heredity, predisposition, race, poor food, bad housing, overwork, worry, illness, dissipation, and reinfection later in life, any of these might so lower resistance that tubercle bacilli, already implanted, began to multiply. Landis studied 362 children, brought to the Phipps Institute three or four years ago, because of tuberculosis in a parent. Within the past few months he had again observed 111 of these children. Over three years ago twenty-five were considered tubercular ; all were now well except two, one of whom had died recently of tuberculosis, the other of an unknown cause. Slight daily elevation of temperature to between 99° and 100° F. was not abnormal in children. Physiologically normal physical signs were often exaggerated in children. Thus, sixty-seven of sixty-nine children with physical signs showed impairment and broncho-vesicular breathing at the right apex ; yet, as Fetterolf had shown in adults, this was probably normal. Of the 111 children recently seen, seventeen had had a supposedly diseased right apex, and in two others both apices were said to have been affected ; yet four years later seventeen of these nineteen were in good health, one still had a cough and only one had died of tuberculosis. The expired air might be directed into the pharyngeal vault, or against the roof of the mouth, simulating bronchial breathing all over the chest. Faulty posture also changed the breath-sounds. Since it was normal for children to show some enlargement of the lymph-nodes, it was not justifiable to consider enlarged cervical lymph-nodes an evidence of tuberculous infection. Physical signs supposedly due to enlarged bronchial glands were more fanciful than real, since the X-ray photographs taken of children with these signs had been uniformly negative. Dr. Landis advised against the wholesale massacre of tonsils simply because they were enlarged. The condition of the teeth was of importance in children, since bad teeth contributed to lower vital resistance. A positive tuberculin reaction did not mean clinical tuberculosis ; nor did a negative test entirely shut out the possibility of tuberculosis. These tests were of no value except as an evidence of hypersensitiveness. The really important thing was to determine whether these children were physiologically normal ; and if below par, the sociological evils were found to be the cause and not tuberculosis. If such a child continued living in insanitary surroundings it was sure to become infected in time. These cases were called pretuberculous. When removed from their bad surroundings they again return to normal. The main problem consisted in determining whether the child was physiologically normal ; and if it was not, in making every endeavour to provide the means of making it normal.

Dr. W. S. CORNELL spoke of the children in our public schools. No examination was possible, as the medical inspectors were not allowed to undress children. An attempt was now being made to group the supposedly tubercular children in open-air classes. There were now one open-air class and seven classes held in rooms with open windows. It was almost impossible to decide whether most of these children had tuberculosis or not.

Dr. S. McC. HAMILL said that work undertaken with Drs. Carpenter and Cope to determine the incidence of tuberculosis in children at St. Vincent's Home had emphasised three points: that the conjunctival test was not without danger, that it was much more disturbing in its application and results than the Von Pirquet and More tests, and that it was not any more or any less sensitive than those. They advised that the eye-test should not be used for diagnosis in children. Dr. Hamill believed the routine application of the Von Pirquet test advisable, since a positive result probably indicated the existence of a focus of tuberculosis. This should stimulate us to give great attention to the hygiene of such children. Dr. Hamill had found the tuberculin test very confusing when positive in children having pulmonary lesions, indefinite febrile conditions or some chronic impairment of health. He referred to a case, a baby, aged 11 months, brought to the Polyclinic Hospital Dispensary by a mother, with advanced tuberculosis. The baby was emaciated, extremely anæmic, having broncho-pneumonia. It was so nearly moribund that it was placed in isolation, with the expectation that it would die within forty-eight hours. The original diagnosis of tuberculosis was confirmed by a positive Von Pirquet test. The infant did not die, but was sent out at the end of six weeks, with lungs normal and nutrition good. Either the entire process was tuberculous and the child recovered, or the positive tuberculin tests indicated a limited focus of tuberculosis and the child's serious illness was due to non-tuberculous broncho-pneumonia.

Dr. J. P. CROZER GRIFFITH said that numbers of autopsy statistics showed tuberculosis to be a very common affection of early life. But it was certainly often very difficult to make the clinical diagnosis. This was true also in the acute cases. In infancy the diagnosis between a neurotic state due to other causes and that dependent upon general tuberculosis could often not be made until autopsy; and there was yet no method known to distinguish with certainty between simple and tuberculous broncho-pneumonia, except upon discovery of tubercle bacilli in the secretion, which was by no means always easy. In older children acute miliary tuberculosis simulated typhoid fever until, perhaps, tuberculous meningitis appeared. Outside of the joints, meninges and peritoneum, tuberculosis was not frequent in children, at least clinically. Small, scattered lung foci could not be discovered by clinical examination and passed into tuberculous broncho-pneumonia; and chronic phthisis was very rare. This was not against the well-known frequency of tuberculosis in early life, but against the power to recognise it. He was very sceptical regarding the many published lists of cases attempting to show by clinical examination the frequency of tuberculosis at school-age.

Société de Pédiatrie, Paris.*May the 12th, 1914. Bulletin No. 8.*

Chronic Appendicitis and Inguinal Hernia.—M. VEAU had collected fifty-three cases of inguinal hernia operated on by him. In twenty-four simple cases the appendicitis was overlooked in one half. He was of opinion that when a child, the subject of inguinal hernia, complained of pain, appendicitis should be suspected. A normal inguinal hernia was not painful. The appendix should be systematically examined in every child who has a hernia. Ablation of the appendix by inguinal incision was possible in young infants; later an incision over McBurney's point was necessary.

Heliotherapy in Surgical Tuberculosis.—M. TRÈVES gave an account of his experiences at Leysin and on the French Mediterranean littoral and insisted on the immense benefit obtained by a sea cure combined with heliotherapy. He recommended exposure of the whole body to the sun during several hours each day, whether the joints were immobilised or not. The cure should not supersede the surgical treatment of sequestræ.

Generalised Sarcoma in an Infant.—MM. HALLÉ and FRANÇON showed pathological specimens of a boy of 3 months, admitted for intense dyspnœa and fever (40·4°). There were also marked œdema of the lower part of the body, numerous tumours on the skin and exophthalmos.

Two Cases of Cerebro-spinal Meningitis cured by Injections of Anti-parameningococcal Serum after Failure with Anti-meningococcal Serum.—MM. DELORT and STIASSNIE related the cases of two children, aged 4 and 7 months, who presented all the symptoms of cerebro-spinal meningitis, and in whom a diplococcus analogous to the meningococcus was found.

Purpuric Form of Pneumococcal Septicæmia.—MM. ROLLAND and BUC reported the case of a child of 15 months admitted to hospital with fever and suppurative otitis. He subsequently developed purpura and meningitis, of which he died. A blood-culture taken during life showed the presence of the pneumococcus in the pus of the ear, the cerebro-spinal fluid and the serum of the purpuric skin.

Study of the Blood-dust in Infants.—MM. NOBÉCOURT and MAILLET found that in infants whose digestion was good the blood-dust was abundant, while the amount diminished or even disappeared in the ill-nourished or those on a water diet. In general the amount of blood-dust was in relation to the richness of the milk in fat.

Azætæmia and Fæcal Ash in Athreptics.—MM. NOBÉCOURT and BRÔT, taking into consideration the loss of mineral matter which plays so important a part in Parrot's athrepsia, had made researches as to the amount of urea in the cerebro-spinal fluid and the relations between the amount of

ash in the faeces to that in the food. The quantity of faecal ash was always less than the amount ingested. In athreptics, who are azotæmic in proportion to the cachexia, the proportion of ingested ash was 12 to 25 per cent., while it reached 28 to 30 per cent. in those cases which were on the way to recovery.

Hydatid Cyst in the Brain of a Girl of fourteen years.—MM. CASSOTTE and BOCCA. A woodcut of the post-mortem appearances is given in the 'Bulletin.' There were no physical signs to explain the occurrence of epileptiform attacks.

Benign Encephalitis and Acute Ataxy.—MM. GUINON and AINE related the case of a boy of 4 years who, after an attack of measles, became suddenly unconscious. A phase of agitation and choreiform movements followed lasting ten days. In a second case the onset was that of a cerebro-spinal meningitis with unconsciousness, torpor, and then general rigidity. Recovery took place after two months.

Cyst in the Glosso-epiglottic Fold.—MM. ABRAUD and MASSON described a case which resembled ranula in its histological structure.

Polypus of Pharynx.—M. ABRAUD showed a large fibro-mucous polypus the size of a hen's egg which he had removed from the pharynx of a child of 11 years.

Acute Renal Insufficiency during latest Suprarenal Tuberculosis.—MM. MÉRES and HENYER reported the case of a boy aged 14½ years admitted to hospital in a state of prostration and unconsciousness with a temperature of 104° F. and pulse of 140. Serum diagnosis and lumbar puncture gave negative results. Autopsy showed lesions of enteric fever and tuberculosis of the suprarenal capsules.

Congenital Syphilis with Inflammation of both Tibiæ.—MM. MÉRES and HENYER reported the case of a boy, aged 14 years, admitted into hospital complaining of pains in the legs, with slight adenopathy and rise of temperature. Radioscopy showed periosteal thickening of both tibiæ.

Unilateral Glaucoma during Tuberculous Meningitis.—MM. JULES RENAULT and THIERS showed pathological specimens from an infant who, during an attack of ordinary tuberculous meningitis, had a marked prominence of the left eye associated with hypertension of the eyeball and considerable dilatation of the pupil on the same side. A mass of tubercle the size of a nut occupied that part of the floor of the fourth ventricle which corresponded to the nuclei of the fourth and sixth and seventh nerves.

Post-diphtheritic Laryngo-tracheal Cicatricial Stenosis.—MM. SAVARIAND and ZAEFFEL reported a case in a boy, aged 4 years, cured by laryngostomy.

VINCENT DICKINSON.

THE FIFTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

This Congress will be held in Brussels in 1915. The programme contains the following subjects: (1) "The School Building and its Equipment," (2) "Medical Inspection in Urban and Rural Schools," (3) "The Prevention of Contagious Diseases in Schools," (4) "Teaching of Hygiene to Teachers, Scholars, and Parents," (5) "School Hygiene in Relation to Physical Education at Different Ages," (6) "Teaching Methods, Syllabusses, and School Equipment in Relation to Hygiene," (7) "School Hygiene in Relation to Exceptional Children," (8) "School Hygiene in Relation to Adolescents."

This Congress is placed under the patronage of H.M. King Albert of the Belgians and under the auspices of the Belgian National Institute of Pædology and of the Belgian Pædotechnical Society; the organising committee is presided over by Mr. J. Corman, Director-General of the Primary Studies at the Department of Science and Art, and of Dr. J. Demoor, rector of the Free University of Brussels.

All communications and inquiries should be addressed to the Secretary, Dr. H. Rulot, 66, Rue des Rentiers, Brussels.

Abstracts from Current Literature.

Medicine.

Protection of the infant against tuberculosis in the first year of life (*Arch. de Méd. des enf.*, 1914, xvii, p. 241).—**P. Nobécourt** and **G. Schreiber** find that: (1) the infant is not born tuberculous and that only exceptionally is tuberculosis hereditary. It is nearly always contracted by contagion after birth, and the contagion is always familial; (2) tuberculosis of the child is then inevitable, and the only means of preventing contagion is removal to a healthy milieu; (3) the proportion of tuberculous children increases rapidly with age, and in order to be effective removal from the infective source to the country or seaside should be as soon after birth as possible.

F. R. B. ATKINSON.

Latent tuberculosis in infants (*Monatsschr. f. Kinderheilk.*, 1914, xii, p. 618).—**T. A. Ossinen** examined 100 bodies of children, 55 males, 45 females, as far as the peritracheal, peribronchial, and mesenteric glands were concerned by antiformin, histological examination and inoculation into guinea-pigs. In ninety-seven, microscopically nothing was found, and examination with antiformin and by inoculation gave a negative result; in the three other cases microscopically the examination was negative but positive by the other two methods.

F. R. B. ATKINSON.

A study of the child in the tuberculous milieu (*Arch. of Ped.*, 1914, xxxi, p. 96).—**M. Fishberg** investigated 217 families, and found among 1129 persons, 792 under 15 years of age. Nearly all were reared on breast-milk, only 5.5 per cent. had been artificially fed. Infants suckled by consumptive mothers thrived as well as others of their class, but many became infected. The weight of the infants was much short of the normal. The form of the chest was normal in 62.5 per cent., 27.5 had flat chests, and 10 per cent. had

rachitic chests. In 8 per cent. enlarged superficial thoracic veins were found. The cervical glands were swollen in 67·8 per cent. Enlarged tonsils, adenoids, etc. were found in 58·6 per cent. The cutaneous tuberculin test was positive in 7 per cent. of infants between one and six months. At 14 years 53·79 per cent. were found infected with tuberculosis. The tuberculous milieu did not materially increase the number infected with tuberculosis among the children over 6 years of age, but the proportion was much higher under 4 years. The prognosis depended largely on the age at which infection took place, the danger of tuberculosis as a fatal disease among children, was in an inverse ratio to the age at which they were infected. Those infected during the first two years of life were in grave danger of succumbing to hæmatogenous tuberculosis, especially tuberculous meningitis.

F. R. B. ATKINSON.

Chronic tuberculosis of the peritoneum in infancy (*'Le Nourisson,'* 1914, II, p. 130).—**A. B. Marfan.**—Chronic tuberculosis of the peritoneum is commonest between six and fifteen years of age, rare before two. In infancy ascitic and fibro-caseous forms occur. The affection is much graver than in older children. The author differentiates the large flaccid abdomen from the large tympanitic one; the former is associated with symptoms of slight dyspepsia, the latter may be transitory, intermittent and limited to the region of the stomach, or intermittent and generalised. In the large tympanitic abdomen the disease may be chronic with diarrhoea and due to intestinal ulcerations, chronic with constipation, and chronic without diarrhoea and without constipation, and this the author believes is ordinarily due to tuberculosis of the peritoneum or mesenteric glands, without affection of the intestine.

F. R. B. ATKINSON.

Hæmatology of infantile tuberculosis (*'Gaz. internaz. di med. chir., etc.,'* 1914, pp. 409 and 448).—**S. Maggiore,** as a result of observations on children of all ages and suffering from various forms of tuberculosis, comes to the following conclusions: (1) There is no single and constant hæmatological formula for any stages or form of tuberculosis. Variations occur in every case. (2) From cases with a normal finding one passes to those with reduction of the hæmoglobin and red cells until in exceptional cases, especially in infants, a high degree is reached. (3) The white cells are only exceptionally diminished; as a rule they are normal or increased. Hyperleucocytosis, however, is rare. (4) Both in infants and older children there is always an increase in the number of mononuclears and transitionals. This increase affects the lymphocytes, only exceptionally the polymorphs. (5) The basophiles in most cases are deficient or behave as under normal conditions. (6) The eosinophiles in exceptional cases are increased; as a rule they are normal or diminished. (7) The appearance of anomalous forms is not frequent. When there is a marked reduction of hæmoglobin and of the red cells, polychromatopsia, anisocytosis, and exceptionally myelocytes may be found.

J. D. ROLLESTON.

Tuberculous bacillæmia (*'Osp. dei Bamb. di Milan,'* 1913, II, No. 9).—**L. Pollini** examined the blood of adults in an advanced stage of pulmonary tuberculosis and of children affected with acute miliary tuberculosis, acute and chronic pulmonary forms and various forms of surgical tuberculosis. As in thirty-eight cases direct microscopic examination never showed any bacillæmia, and in sixty-five cases the blood of tuberculous patients never

infected guinea-pigs, Pollini concludes that tuberculous bacillæmia is extremely rare, at least in the common forms of tuberculosis. He attributes its alleged frequency to mistaking the acid-fast bacilli present in ordinary distilled water for tubercle bacilli.

J. D. ROLLESTON.

The bitonal cough in tuberculosis of the glands of the trachea and bronchi in infants (*'Le Nourisson,'* 1913, I, p. 325).—A. B. Marfan and D. Mantoux.—Marfan has noticed this peculiarity of the cough in this condition in children less than two years of age, and considers it a valuable sign. There are two distinct sounds in the cough, the first low and veiled and the second higher and almost singing. In ten cases that came to autopsy and which during life had this cough eight showed the above lesions. It indicates a severe and serious condition of the glands.

F. R. B. ATKINSON.

The ætiology of orthotic albuminuria, with especial reference to its relationship to tuberculosis (*'Arch. f. Kinderheilk.,'* 1913, LXII, p. 34).—F. Wendenburg considers that infection plays a part in the production of this form of albuminuria. As regards tuberculosis, he found that of 250 children from nine to thirteen years of age orthototic albuminuria was present in 37 per cent. of cases which showed a positive von Pirquet reaction.

F. R. B. ATKINSON.

Scrofuloderma in the first year of life, and the results of treatment in tuberculosis (*'Monatsschr. f. Kinderheilk.,'* 1914, XII, p. 699).—K. Bahr describes five cases, in only one of which tuberculin was used. The other four recovered permanently without treatment, and there were no signs of tuberculosis elsewhere after an interval of two years. The cases show that in the first year of life scrofuloderma is often very mild, and easily cured.

F. R. B. ATKINSON.

Disseminated miliary tuberculosis of lungs and skin (*'Amer. Journ. Dis. Child.,'* 1914, VII, p. 24).—W. P. Northrup reports eight cases in children, aged from 15 months to 9 years, illustrating the diagnostic value of X-rays and tuberculous eruptions. The cases presented the mental pictures of pneumonia, but no physical signs of bronchitis. The skin lesions also possess prognostic value, as their presence is almost always associated with a fatal form of tuberculosis in the young child. The individual lesions are of the size of the typhoid rose-spots. They are topped by a tiny vesicle, surrounded sooner or later by a congested or hæmorrhagic zone, with the formation of a crust, which, when removed, leaves a little pit. Diagnosis must be made from chicken-pox, molluscum contagiosum, and syphilis.

J. D. ROLLESTON.

Radiographic studies of the chest in tuberculous meningitis (*'Arch. of Ped.,'* 1913, xxx, p. 659).—I. O. Woodruff bases his report on fifteen cases of tuberculous meningitis, and finds that there is usually considerable pulmonary involvement in tuberculous meningitis, and that when the former exists the radiographic shadows can be relied on to diagnose the pathological process, and hence can aid in the diagnosis of meningitis.

F. R. B. ATKINSON.

Transitory attacks of tuberculous meningitis (*'Bull. et Mém. Soc. Méd. Hôp. de Paris,'* 1914, xxxvii, p. 252).—H. Barbier.—A boy, aged eight years, subject to repeated attacks of bronchitis, was admitted to

hospital in November, 1911, with pleural effusion and sputum containing tubercle bacilli. The effusion gradually cleared up, the tubercle bacilli disappeared, and the sputum ceased. At the beginning of March, 1912, meningeal symptoms, consisting of headache and vomiting, occurred, and lasted for a week, together with signs of active disease in both lungs. On April 10th the meningeal symptoms returned, and a fortnight later intercostal herpes developed, accompanied by exaggerated reflexes, ankle clonus, unequal pupils, and irregular pulse. The cerebro-spinal fluid was normal. Tubercle bacilli were found again in the sputum. The herpes and meningeal symptoms disappeared by May 5th, and the signs in the lungs became less marked. Vomiting, headache, and exaggeration of the right knee-jerk occurred again from May 23rd to 26th and from June 11th to 15th. Subsequently improvement occurred until January, 1914, when the boy showed active disease of the lungs and exaggeration of the knee and ankle jerks, which Barbier regarded as a permanent stigma of the meningeal episode in April, 1912. He had reported similar cases before (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, pp. 178 and 278).

J. D. ROLLESTON.

Cerebellar ataxia in tuberculous meningitis (*'Arch. de méd. des enf.'*, 1914, xvii, p. 367).—A. d'Espine, who recently drew attention to disturbance of equilibrium in tuberculous meningitis (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 513), records a case of a boy, aged $2\frac{1}{2}$ years, in whom cerebellar ataxia was an early sign of tuberculous meningitis. In addition to the ordinary post-mortem findings, a solitary tubercle was found in the posterior part of the superior vermis.

J. D. ROLLESTON.

Action in vitro of extracts of lymphatic glands, and various normal organs on the tubercle bacillus (*'Journ. de Phys. et de Path. Gén.'*, 1913, xv, p. 835).—A. B. Marfan, B. Weill-Hallé and H. Lemaire find that the lymph-glands and normal spleen attenuate the virulence of the tubercle bacilli. The tissue of the liver has a similar but less marked action. The serum does not possess this action. The cerebral pulp on the contrary increases the virulence of the tubercle bacillus. It cannot be determined whether the product which possesses this attenuating action is of the nature of an enzyme or lipid.

F. R. B. ATKINSON.

The passage of Koch's bacillus in the milk of tuberculous wet-nurses (*'Journ. de Méd. de Bordeaux'*, 1914, lxxxv, p. 93).—B. Auché states that animals injected with milk from tuberculous wet-nurses had never become tuberculous in the experience of numerous authors. In a third of the cases, however, others have found that infection takes place. By employing antiformin tubercle bacilli had nearly always been found in the milk.

F. R. B. ATKINSON.

Muscular work and bodily constitution (*'Arch. f. Kinderheilk.'*, 1913, *'Baginsky Festschrift'*, p. 515).—H. Roeder finds that muscular work can influence bodily constitution to a high degree, and excites growth and weight. Hence in young persons movements in the open air, together with good food and hygienic conditions, are essential, especially as prophylactics against tuberculosis.

F. R. B. ATKINSON.

Tuberculosis and the von Pirquet test in children (*'Med. Record'*, 1913, lxxxiv, p. 1032).—L. Shalet considers that no ambulant cases of

possible tuberculosis occurring under 16 years of age should be diagnosed as such unless the von Pirquet test is positive. He also thinks that no child is suffering from tuberculous infection who does not react to the test, unless he is too ill to react or is suffering from some intercurrent acute infection.

F. R. B. ATKINSON.

Von Pirquet's reaction in children (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 71).—**I. Cronquist** found that the size of the papules varied considerably. They were much larger in children with an exudative diathesis than in others. The individual papules also varied in size with five vaccinations in the same children, whereas in those of a non-exudative diathesis the five papules were of the same size. The tuberculin reaction was stronger if the dilutions were made with water than with physiological saline solution, and two vaccinations were made, one with undiluted old tuberculin and one with Beranek's tuberculin. The papule which arose at the site of injection of old tuberculin only was larger than when no Beranek's serum was used.

F. R. B. ATKINSON.

Tuberculin skin reactions in infancy (*Arch. of Ped.*, 1913, xxx, p. 665).—**A. Brown** found that seventy of the hospital cases under two years giving a positive reaction proved fatal, and the lesions were normally general in distribution. If the first test be negative, the test should be repeated if tuberculous be suspected. A negative cutaneous reaction in infancy, except in moribund cases or in children suffering from measles, is almost certain evidence against tuberculosis. Six hundred and fifty cases were tested.

F. R. B. ATKINSON.

The diagnostic and prognostic values of repeated local tuberculin reactions, with remarks on the meaning of tuberculin hypersensitiveness (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 123).—**G. Bessan** and **J. Schwenke** used three dilutions of Koch's old tuberculin 1 : 10,000, 1 : 1000, and 1 : 100. The dilutions were made every eight days. An intracutaneous injection of 0.1 cm. of the weakest solution was given on the extensor side of the thigh, and the extent of the reaction noted. A second injection was given eight days later at the same spot on the other thigh. If the result was positive the same solution was repeated; if negative the next strongest, and so on. It was found that clinical cases of tuberculosis showed no increase of local tuberculin sensibility. In children a strong local reaction usually indicated an active process. Feeble reaction pointed to a progressive or inactive condition. Marked increase of local sensibility excluded active disease. There was a quantitative and qualitative difference between the courses of local tuberculin reactions and serum hypersensitiveness.

F. R. B. ATKINSON.

Experiences with Rosenbach's tuberculin in the treatment of internal tuberculosis in children (*Arch. f. Kinderheilk.*, 1914, LXII, p. 337).—**A. Stommel** is not favourably impressed with this tuberculin. Of eighteen cases treated with it for tuberculosis of the lungs and bronchial glands six were markedly improved, four showed slight improvement, five no improvement, three became worse and two of these died. Disappearance of the lung condition occurred in only one case; there was no anti-pyretic action. In three cases of tuberculous peritonitis improvement occurred.

F. R. B. ATKINSON.

The significance of chronic cough and wasting in childhood ('*Clin. Journ.*', 1913, XLII, p. 437).—**E. B. Smith** limits himself to children between three and thirteen suffering from these symptoms, which he finds are chiefly associated with some intestinal derangement. The cough is dry and hacking, and is noticed on first going to bed or rising in the morning. The throat is usually congested and adenoids are frequently present. Wasting may be slight or excessive, and there is often pain in the epigastrium. The appetite is bad; constipation alone or alternating with diarrhoea is frequent. Pallor, cold hands and feet, sweating, most marked at night, flabby muscles and atony of the bowels are common. Sodæ bicarb. tr., rhei co. and tr. nucis vom., are good remedies. The teeth should be carefully attended to. Meals should be regular; sweets should be avoided. These cases are commonly classed as tuberculous, especially tuberculous bronchial glands.

F. R. B. ATKINSON.

Respiratory infections in infants' wards ('*Amer. Journ. Dis. Child.*', 1914, VII, p. 380).—**W. F. Chappel** and **A. Brown** during the past two years had 129 cases of acute naso-pharyngeal infection in the infants' wards, and not a single case of measles, whooping-cough, or scarlet fever. During the same period, out of 271 marasmus babies only 29 died from uncomplicated marasmus, while of the total deaths (97), two-thirds were due to complications chiefly respiratory. Pneumococcus and streptococcus infections caused most of the trouble. As prophylactic treatment they recommend: (1) increasing the child's resistance by careful attention to its nutrition; (2) careful nursing to minimise danger of transmitting infection; (3) direct prevention of respiratory infection by post-nasal douching. Warm antiseptic solutions were used, chiefly boracic acid, followed by argyrol solution in various strengths.

J. D. ROLLESTON.

Dorsal percussion in enlargement of the tracheo-bronchial glands ('*Ann. Journ. Med. Sci.*', 1913, CXLVI, p. 660).—**J. C. da Costa, Jun.**—Of eighteen cases of tracheo-bronchial glandular affection two-thirds showed interscapular dulness above the level of the inferior scapular angles, or over the first seven thoracic spinous processes; two dulness below the inferior scapular angle, three general thoracic hyperresonance over the entire thoracic segment, and in one there was no impairment of resonance below the level of the third thoracic spine. He believes that in simple enlargement of the tracheo-bronchial lymphatic glands percussion of the thoracic vertebræ, especially above the level of the inferior scapular angles, usually affords tonal changes of real value.

F. R. B. ATKINSON.

Perforation of a bronchus by a glandular abscess ('*Riv. Osped.*', 1913, III, p. 668).—**U. Mancini.**—A boy, aged 3 years, who had always been delicate, developed a paroxysmal cough resembling pertussis, in convalescence from measles. The cough persisted for about a year, and was accompanied by irregular fever. The general condition had been getting worse for a week before admission, and the fever had been high. Death took place from suffocation following an attack of coughing two days after admission. Post mortem there was a diffuse adenopathy of the bronchial tracheal and aortic glands, and the right bronchus was found to be perforated by a glandular abscess in which were a very few bacilli and isolated cocci. There were also enlargement of the liver, spleen and mesenteric glands and

follicular colitis of the last segment of the colon. Reference is made to the similar case reported by Cacciami (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 464).

J. D. ROLLESTON.

Subcutaneous emphysema in children (*Arch. de med. des enf.*, 1914, xvii, p. 81).—**J. Comby**.—This may be due to a lesion of the nasal fossæ, facial sinuses, larynx or trachea (intubation or tracheotomy), bronchi and lungs (foreign bodies, thoracentesis, rupture of alveoli, or glandular or pulmonary cavities). It is rarely due to a lesion of the œsophagus, stomach or intestine. Glandulo-pulmonary tuberculosis is a frequent cause and then in order of frequency spasmodic bronchitis, pertussis, broncho-pneumonia, pneumonia, diphtheria and dilatation of the bronchi. The air penetrates into the cellular tissue of the mediastinum, reaches the base of the neck and gradually extends over the face, trunk and limbs. Dyspnœa and cyanosis are almost always present. The emphysema may disappear spontaneously in one or two weeks. The prognosis is bad in half the cases. The dyspnœa should be treated with inhalations of oxygen, intestinal derivatives, anti-spasmodics, digitalis and theobromine, and warmth to the extremities. Comby records 10 personal cases in which the emphysema was due to bronchitis, broncho-pneumonia, pulmonary tuberculosis, thoracentesis and measles without broncho-pneumonia.

J. D. ROLLESTON.

The prognosis of generalised emphysema in children (*Gaz. des Hôp.*, 1913, lxxxvi, p. 1901).—**Rivet** reports two cases. The first was a child, aged 7½ months, in whom the emphysema was the terminal event in double broncho-pneumonia; the second was a child, aged 4 years, in whom it supervened in the course of slight bronchitis, and cleared up in a week. The prognosis varies greatly, it is worse the younger the child, and when there is severe lung disease and a general toxic state. The treatment consists in checking the cough, wet compresses to the thorax, and oxygen inhalations. The induction of pneumothorax is impracticable, as one cannot discover in which lung is the lesion causing the emphysema.

J. PORTER PARKINSON.

Malarial asthma (*Arch. Brasil. de med.*, 1913, iii, p. 776).—**T. de Almeida, Jun.**, records a case in a girl, aged 7 years. The ordinary treatment for asthma proving ineffective, examination of the blood was made and showed the presence of the malarial parasite. Complete recovery rapidly followed hypodermic injections of formiate of quinine.

J. D. ROLLESTON.

Chyliform pleurisy in a child (*Bull. et Mém. Soc. Méd. Hôp. de Paris*, 1913, xxxvi, p. 741).—**F. Chevreil** records a case in a boy, aged 5 years, who had been suffering from dyspnœa for several months. He was the subject of adenoids, and probably latent tuberculosis. On paracentesis 550 c.c. of milky fluid were drawn off from the right pleural cavity. Complete recovery took place. The case was remarkable for its insidious onset, slow course and constitutional disturbance. The fluid was alkaline, had a specific gravity of 1020, contained 17.20 per cent. of mineral matter, 20 per cent. of neutral fats, and 55.90 of proteids. Ferments and bacteria were absent. Injection of the fluid into guinea-pigs was negative. No explanation could be given of the pathogeny of the effusion.

J. D. ROLLESTON.

Purulent pleurisy in childhood (*'La Pédiatrie,'* 1913, xxi, p. 896).—**S. Cannata**, from a study of 88 cases aged from 4 months to 10 years, finds that purulent pleurisy is more frequent in the first twenty-seven years of life, and among males (68 per cent.), and in the great majority of cases is consecutive to lobar pneumonia. In more than half the cases (62 per cent.) Fränkel's diplococcus was found, in a less number (21 per cent.) the streptococcus, while the presence of other pathogenic germs was rare. Objective examination did not yield certain signs of the purulent nature of the exudate, recourse must be had to exploratory puncture in every case. In mild cases, especially if due to Fränkel's diplococcus, absorption of the exudate may be waited for; when it does not tend to disappear or increases, or when the general condition is serious, surgical intervention is called for. Costotomy is preferable since it affords easier evacuation and better drainage.

VINCENT DICKINSON.

Pneumococcal empyema in child, aged 7 weeks (*'Arch. de méd. des enf.,'* 1913, xvi, p. 850).—**Y. Fouzin**.—The disease came on rapidly with left lobar pneumonia and right broncho-pneumonia. Operation removed a large amount of pus. The case ended fatally.

F. R. B. ATKINSON.

The siphon treatment of empyema in infants and young children compared with other measures—a study of 154 cases (*'Am. Medicine,'* 1913, viii, p. 381).—**E. Holt** finds that (1) empyema in infancy has a high mortality; (2) one of the chief obstacles to recovery is the difficulty in expansion when the lung is subjected to atmospheric pressure; (3) aspiration is not to be depended upon as a means of treatment; (4) the injection of bactericidal substances is open to danger; (5) rib-resection is not advisable in recent acute cases under the age of two years; (6) simple incision between the ribs with the introduction of a single tube is sufficient in most cases to secure adequate drainage; (7) siphon drainage is the best method of drainage.

F. R. B. ATKINSON.

Acute non-specific pneumonia in the first days of life (*'Jahrb. f. Kinderheilk.,'* 1914, lxxix, p. 140).—**T. E. H. Thaysen** distinguishes the following forms: (1) Placental infectious pneumonia, due to syphilis, tubercle, pneumococci, streptococci and staphylococci. (2) Aspiration pneumonia resulting from aspiration of foetid urine, purulent secretion from a pathological condition of the vagina, from secretion from a normal vagina, or from milk or other liquid. (3) Aërogenous. (4) Metastatic resulting from a primary affection of the bowel or navel infection or other lesions. This is excessively rare. The commonest form is the aspiration pneumonia. The aerogenous is rare. The author gives various statistics of cases met with by him of the various forms.

F. R. B. ATKINSON.

Acute lobar pneumonia secondary to measles (*'Thèses de Lyon,'* 1912-13, No. 58).—**L. Grand**.—The thesis contains the histories of fourteen cases, twelve of which occurred in children aged from one to ten years, and two in adults. Grand concludes as follows: (1) Acute lobar pneumonia in measles, though less frequent than broncho-pneumonia, should not be regarded as altogether exceptional. (2) Its symptoms and course resemble those of primary pneumonia, but as a rule the signs are less definite and the course is more irregular and protracted. It has also a tendency to grey

hepatisation. (3) Pseudo-lobar broncho-pneumonia often has the same symptoms as those of acute lobar pneumonia. A clinical diagnosis can only be made by radioscopy, when in the case of acute lobar pneumonia an axillary triangle will be found (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 318). (4) The pathological diagnosis is made by finding on section a triangular zone of hepatisation and by microscopical examination of the hepatised area.

J. D. ROLLESTON.

The curative value of turpentine subcutaneous injections (*Lyon Méd.*, 1913, cxxi, p. 941).—**Péhu** and **Pillon** give the results of their investigations on this method of treating broncho-pneumonia. They employed a dose of $\frac{1}{2}$ c.c. in children below 2 years, and 1 c.c. above that age. Pus formation, either manifest or latent, circumscribed or diffuse, occurred without exception. In 78 cases they had 30 cures. In 16 out of 34 cases of broncho-pneumonia the injection was followed by rapid improvement: 13 died. In broncho-pneumonia following diphtheria 13 out of 18 cases were fatal. In that following measles there were 8 deaths and 2 cures. Three cases of broncho-pneumonia following whooping-cough were all cured. Two cases of scarlet fever were not benefited. The authors considered their results as the reverse of encouraging.

VINCENT DICKINSON.

Surgery.

The evolution of surgical tuberculosis in the infant (*Arch. de méd. des enf.*, 1914, xvii, p. 161).—**Froelich** considers surgical tuberculosis from the time of birth up to the second year and finds that its frequency is very great. Cutaneous gummata may occur as early as the fifteenth day. It usually takes on the hypertrophic form. Fungosities suppurate rapidly, but fistulæ are of short duration. In later childhood it is usually epiphyseal; before that time frequently diaphyseal, attacking both the smaller and larger bones. In the hip, early luxation often results. In the knee, an acute form may develop and resemble an acute infection, and is often quickly cured without stiffness. The disease of the bones is very often multiple, but this does not make the prognosis necessarily more grave. The mortality is about 10 per cent. Tubercular adenitis is of acute origin and leaves few scars. Visceral tuberculosis is less favourable. Peritonitis is very fatal. Tuberculosis of the testicle is very common; the evolution is often acute. Treatment in surgical tuberculosis should be conservative as far as possible.

F. R. B. ATKINSON.

Significance of von Pirquet's test in surgical tuberculosis in children (*Boston. Med. and Surg. Journ.*, 1914, clxx, p. 550).—**L. B. Robertson** records the results of the test made on 350 cases of surgical tuberculosis, all under twelve years of age. Only 2.9 per cent. were negative. Of cases without definite clinical evidence of tuberculosis, although some showed enlarged anterior cervical glands and others gave a family history of tuberculosis, 14 per cent. gave a positive reaction. In apparently non-tuberculous cases the reaction was more frequently negative in the younger children. Thus, of 48 such cases, aged from 0-4 years, 10 per cent. were positive, of 61 cases, aged from 4-8 years, 14.5 per cent. were positive, and of 40 cases, aged from 8-12 years, 17.5 per cent. were positive.

J. D. ROLLESTON.

Multiple bone tuberculosis, atypical in its distribution and X-ray appearances (*Boston Med. and Surg. Journ.*, 1914, CLXX, p. 547).—**H. J. Fitz Simmons**.—A boy, aged 16 months, presented three tumour masses on the right parietal region, a fluctuating reddened area about the size of a pea at the outer canthus of each eye, a nodular thickening along the descending ramus and angle of the left lower jaw, a few small areas on the right thigh covered with dark crusts, an area 2 in. long and 1 in. wide over the upper third of the right tibia, and swelling of the epiphysis of the radial joint at the elbow. Microscopical examination of a section of the superficial lesions showed typical tubercles.

F. R. B. ATKINSON.

Focal tuberculosis with multiple sequestra (*Arch de Méd. des enf.*, 1913, xvi, p. 921).—**A. Trèves** describes the following lesions in a child three years of age: (1) Ulceration of the first phalanx of the left great toe; (2) swelling of the left first metatarsal bone; (3) swelling and fluctuation of the first phalanx of the right fourth toe; (4) swelling of the left elbow; (5) right elbow much enlarged; (6) first phalanx of the middle left finger increased in size; (7) third metacarpal slightly enlarged; (8) first and second phalanges of the right index enlarged and ulcerated; (9) first phalanx of the right middle finger and the metacarpo-phalangeal articulation much enlarged. Radioscopy showed numerous sequestra in these bones. Operation was performed successfully on the various lesions.

F. R. B. ATKINSON.

Cure of external tuberculosis by means of heliotherapy (*Paris Méd.*, 1912-13, II, p. 257).—**Rollier** describes his method of treatment of enlarged glands, tuberculosis of joints and open cutaneous tuberculosis by means of fresh air and the sun's rays with numerous drawings of the various lesions thus treated with success, and finds that closed tuberculosis is, as a rule, cured by this method, and frequently also open tuberculosis.

F. R. B. ATKINSON.

The use of celluloid in the treatment of tuberculous disease of the spine (*Brit. Med. Journ.*, 1913, I, p. 1200).—**H. J. Gauvain** fully describes the technique of making spinal jackets from celluloid. Jackets made of this material are light, elegant, rigid, but slightly elastic, strong, are not acted upon by the heat and the moisture of the body, maintain their shape indefinitely, and are comparatively easy to make. Their greatest value lies in the fact that they may be made to accurately fit a cast of the patient and maintain the shape of this cast indefinitely. The article is illustrated.

J. ALLAN.

Tuberculosis of the genital organs in children (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 2051).—**O. Lyons** states that of ninety-three cases of tuberculosis involving the testes in children reported by a number of authors, forty-four were under 2 and forty-seven over 12 years of age, *i.e.* about half the cases occur in the first period of childhood. Generally, the disease is localised in one testicle; however, it often affects both. In the first period of childhood it occurs nearly as often on one side as on the other, but after the age of twelve it occurs more frequently on the left side, as is the case with varicocele. This is thought to be due to disturbed circulation during walking, giving rise to some difference in the return of the venous blood. Tuberculosis of the undescended testicle in infants is very rare. In

some cases the author believes that the male generative organs are the seat of primary tuberculosis, and although such a condition of the prostate and seminal vesicles in children is rare, he reports the case of an infant, aged 20 months, whose mother was tuberculous. The child had lost weight and had frequent micturition and irritability. The urine contained pus, blood and tubercle bacilli and a large, hard mass was found in the region of the prostate and vesicles on the left side. There was no enlargement of the lymphatic glands, but the liver and spleen were increased in size. The child died three and a half months later. At the post-mortem the thoracic cavity was normal, the mesenteric glands were enlarged, soft and caseous, and the liver and spleen were enlarged and contained many small nodules on the surface; the kidneys were normal. In the region of the vesicles was a large mass on the left side, which contained the vesicle and ampulla; it was filled with caseous nodules and abscess cavities. The bladder was normal. Microscopical examination of the mass, liver and spleen proved them to be tuberculous. Primary tuberculosis of the genital organs in children frequently gives rise to no symptoms. Thus a child, aged 7 months, was first noticed to have a swelling in the left side of the scrotum three or four weeks prior to being seen; this had caused no pain or other symptoms. The epididymis was found to be nodular and enlarged to the size of a walnut. Operation was at first refused, but later softening occurred and thick caseous material was evacuated, which inoculation into a guinea-pig proved to be tuberculous. The cavity was packed with gauze and the mass gradually diminished in size, though a fistula remained for some months. The patient made a good recovery, and was in perfect health four and a half years later, the only evidence of his previous trouble being a thick fibrous cord running from the site of the incision to the globus minor. Another case was that of a baby, aged 16 months, who, two or three months previously, was noticed to have a swelling and hardness of the scrotum. The mother was suspected of tuberculosis; there was a history of the disease in her family. The child was found to have a hydrocele with a mass below and behind the sac. The hydrocele was tapped, but the contained straw-coloured fluid was not examined. The epididymis was then found to be involved. Operation was refused, and later, softening of and redness over the mass appeared. An incision was made and pus evacuated, but no tubercle bacilli were found. The cavity was packed and shortly after another abscess was treated in the same way. Four years later the child was in good health, a small, firm band running from the scar to a small nodule in the epididymis, being all that remained. The prognosis of primary tuberculosis of the genitalia in children is usually favourable, and operation should always be advised.

T. R. WHIPHAM.

Tuberculosis of the testicle (*Med. Record*, 1914, LXXXV, p. 146).—**A. L. Goodman** records a case in a child 2 years and 10 months of age ending in cure. The disease is four times less frequent in children than in adults. The proportion of testicular tuberculosis is one in two hundred cases of infantile tuberculosis. It may be either primary or secondary, and the prognosis is good in the primary form as the disease is restricted, unilateral, and not extending above the inguinal ring. The secondary form is usually more extensive and the remote results very unfavourable. There are numerous references to the literature.

F. R. B. ATKINSON.

Reviews.

DIAGNOSEN AF BARNETUBERKULOSENS KLINISKE INITIALFORMER (THE DIAGNOSIS OF THE EARLIEST CLINICAL FORMS OF TUBERCULOSIS IN CHILDREN). By HERMAN G. GADE. Kristiania: Steen'ske Bogtrykkeri, 1914.

IN this monograph, which forms a supplement to the seventy-fifth volume of the 'Norsk Mag. for Laegevidenskaben,' the writer states the well-known fact that in infants and children tuberculosis of the lungs habitually begins as tuberculosis of the lymphatic glands at the roots of the lungs. This condition was recognised clinically as long ago as 1780 by Lalouette; it was very carefully studied by Rilliet and Barthez in 1840, and since that date has often been the subject of clinical and pathological investigation. In 1824 it was distinguished as "bronchial phthisis," and contrasted with "pulmonary phthisis," by Leblond. Before the discovery of the Röntgen rays it was diagnosed by percussion and auscultation. Many of the authorities have believed that pathological enlargement of the glands at the roots of the lungs could be diagnosed with certainty by percussion of the interscapular region of the back; von Kórányi and others particularly recommend percussion over the upper dorsal vertebral spines. But other authorities (Widerhofer, Hénoc, Heubner, Schlossmann, Sukiennikow) have failed to obtain trustworthy evidence here by percussion. As for auscultation, there is a more general agreement that tuberculosis of the bronchial glands produces changes in the breath-sounds, and also in the voice-sounds according to D'Espine, heard in the interscapular area. Gade's own experience has been gained at the Hagevik Seaside Hospital, where he has seen over 1000 children with various tuberculous infections during the last fifteen years. He attaches little diagnostic importance to the enlarged superficial venules so often seen on the upper part of the thorax in children; they may be evidence of venous stasis, but are not evidence of venous obstruction at or near the roots of the lungs. He is not familiar with the "nervous" cough so often attributed to enlargement of the bronchial glands, and said to be "spastic," "whooping," "*coqueluchöide*" (by the French), "high-pitched," and due to pressure on the vagus nerve. He has not met with attacks of dyspnoea due to these glands, though many German authors have described such. In one case he saw aphonia and tachycardia caused by general and enormous enlargement of the lymphatic glands, due to tuberculosis; the patient, a girl aged 18 years, died in a few days, suffocated by rupture of a large gland into a main bronchus. He has never found Petruschky and Neisser's sign of spinalgia, tenderness on pressure over the second to the seventh dorsal vertebral spines, and places no trust in pains in the chest or under the sternum for the diagnosis of enlargement of the bronchial glands. In the examination of his patients, he looks for interscapular dullness with the patient sitting, his arms loosely crossed in front of him, his elbows resting on his thighs. Gade often finds this dullness, but remarks that while some authorities attribute it to enlargement of the bronchial glands, others say it is due to venous or lymphatic congestion, and yet others describe it as present in the normal person. The same is true of the parasternal dullness, or dullness on either side of the manubrium sterni, so often seen in tuberculous children and attributed by some to enlargement of the tracheo-bronchial gland. Gade attributes no decisive importance to these areas of

dulness; and he holds that the auscultatory phenomena (prolonged expiration, harsh breath-sounds) heard between the scapulæ are not even approximately certain evidence of enlargement of the bronchial glands. He doubts whether "puerile breath-sounds" are ever heard in normal children free from active or obsolete tuberculosis at the root of the lung. His general conclusion is that neither percussion nor auscultation can determine the presence of enlarged bronchial glands.

The most interesting part of his paper is concerned with the *x*-ray diagnosis of these glands, illustrated by thirteen plates and sixteen silver prints. He notes the very wide variations in the shadows cast by the roots of the lungs in normal persons, the streaks and strands and "birch-broom-like" wisps radiating out from the pulmonary hilus. These streaks are commonly said to be mainly pulmonary blood-vessels in young people, mainly bronchial structures in older people, though it is hard to see why they should vary as widely as they do in different persons. Gade supposes that they may really be strands of connective-tissue for the most part, peribronchial, perivascular, and periglandular, and therefore most marked in the old whose lungs are much more fibrous than those of the young. He believes that it is this fibrous tissue that causes the mottling characteristic of the normal adult lung. He agrees with other authors that mere enlargement (up to, say, four times the normal size) does not suffice to make the bronchial glands visible by use of the *x*-rays, or distinguishable from the vague shadows cast by pulmonary or pleural infiltrations. Until they are calcified, the glands cannot be identified as glands; he gives a skiagram and details of a post-mortem examination illustrating this point. He emphasises the importance of defining the "normal" in skiagrams of the lungs, and of excluding from "the normal" all cases with even obsolete pulmonary (or glandular) tuberculosis. With this object he has tested a number of children with von Pirquet's test and with test injections of tuberculin, and has found thirteen who gave no reaction to either. He concludes that these children were free from tuberculous infection, and gives thirteen admirable silver prints of their thoracograms to serve as standards for the normal. None of these children had any puerile respiration-sounds; seven were healthy children from a Home, six were "tuberculous" patients in his hospital. The first seven skiagrams show indefinite streaks and wisps in plenty, but no so-called "gland-shadows," and no detailed or sharply-defined shadows. The remaining six skiagrams, from "tuberculous" patients clinically free from tuberculosis so far as the point could be determined by tuberculin, showed larger and more opaque shadows at the hilus, with sharper edges, and a few small, well-defined blotches. He classifies the skiagrams of children with pulmonary or bronchial gland tuberculosis into four classes, according as the opacities formed in the lungs are mainly due to: (1) Tuberculous or fibrous tissue in connection with the bronchial or hilar glands; (2) peribronchial and perivascular infiltration, with well-defined streaks; (3) advanced stages of (2), including, *e. g.* tuberculous pneumonia; (4) diffuse tuberculous processes, including miliary tuberculosis. He notes that in practice these various types often run into one another, and illustrates them with skiagraphic plates. His general conclusion is that the *x*-rays fail, as percussion and auscultation fail, to give us a certain method of diagnosing tuberculosis of the bronchial glands; this is particularly the case in the initial stages of the disease, the time at which definite information is most urgently required. But the skiagram can give definite information as to the presence of tuberculosis at the roots of the lungs, even in its earliest

stages, although it cannot absolutely define what tissue it is that is infected. Over one hundred references to the literature are given at the end of this well-written and well-illustrated article.

A. J. J.-B.

ACUTE GENERAL MILIARY TUBERCULOSIS. By Prof. G. CORNET. Translated by F. S. TINKER, M.B., B.C., etc. London: John Bale, Sons, & Danielsson, Ltd., 1914. Pp. 107. Price 6s. net.

THIS monograph describes at length the ætiology and pathological anatomy of this disease, and also gives a full consideration to the subject of differential diagnosis, which much enhances the value of the work, as the diagnosis in many instances is by no means easy, and this is perhaps the most valuable chapter in the book. The author finds no treatment of any avail in most instances, but does not look on the disease as entirely hopeless. He mentions one case cured by potassium iodide, and one by Marmorek's serum. We can recommend the work to all interested in the subject. It is well translated.

F. R. B. A.

THE POCKET FORMULARY FOR THE TREATMENT OF DISEASE IN CHILDREN. By LUDWIG FREYBERGER, J.P., M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Eng. Fourth revised and enlarged edition. Adapted to the British Pharmacopœia. With an appendix on Poisons, their Symptoms and Treatment. London: William Heinemann, 1914. Price 7s. 6d. net.

THIS little work, which is intended for the busy practitioner and senior student, is divided into two main parts and several appendices. The first part contains an alphabetical list of drugs with a description of their properties, use, therapeutics, dose and incompatibles. In numerous instances methods of correcting their taste are given and in the case of poisonous drugs the antidotes are added. The second part is a therapeutic index in which the various diseases are arranged alphabetically with their appropriate drugs and the drugs are classified according to their action. An appendix which is inserted between the first and second parts contains the formulæ for various baths, preparations suitable for gargles, hypodermic injections, inhalations and sprays, nasal, pharyngeal and laryngeal applications, and rectal injections as well as a description of von Pirquet's test and tuberculin treatment. Eighteen pages at the end of the work are devoted to the symptoms and treatment of poisons.

Dr. Freyberger is to be congratuated for his skilful arrangement of so much valuable information within a small compass. The book is well printed and tastefully bound.

J. D. R.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Vol. XXV. Edited by L. E. LA FÉTRA, M.D. Chicago: American Medical Association Press.

THIS volume of transactions of the American Pediatric Society for 1913 contains a large number of interesting papers, many of which are illustrated. Dr. Langley Porter writes on "Pancreatic Insufficiency in Children," a condition which in this country is usually termed "celiac disease." Dr. L. E. Holt has a paper on "Duodenal Ulcers in Infancy," which includes a summary of the literature on the subject. Dr. T. M. Rotch describes "Three Types of Occlusion of the Esophagus in Early Life," and Drs. G. R. Pisek and L. T. Le Wald contribute "Further Studies of the Anatomy and Physiology of the Infant Stomach." Other papers which deserve special notice are "Studies on the Incubation Period of Serum Disease," by Dr. D. M. Cowie, and "Acid Intoxication in Children," by Dr. I. A. Abt.

T. R. W.

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A CASE OF KALA-AZAR.

By T. R. WHIPHAM, M.D.Oxon, M.R.C.P.Lond.,

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THE occurrence of cases of tropical diseases in this country are of more than passing academical interest. They give us a glimpse into a field of medicine which is more or less unknown to the majority of those who have not lived in the East. The report, therefore, of a case of kala-azar which was recently under my care may be instructive. Considerable attention has been paid of late to enlargements of the spleen, and this form of splenomegaly is very rarely seen in England.

In the first place it is necessary to make some general observations upon the disease in question. It is known by several names, Kala-azar being that most frequently employed, though Black fever, Dum-Dum fever, and Tropical splenomegaly, are common synonyms. The disease is characterised by a marked enlargement of the spleen and frequently of the liver also. There is progressive anæmia and emaciation, and sometimes the skin shows a peculiar form of hyperpigmentation, from which the name kala-azar or black fever is derived. The fever runs a subacute or chronic course and the mortality is excessively high.

The condition appears to have been first observed in the year 1869 and at that time it was thought to be malarial in nature. A few years later it became epidemic, but it was not until 1882 that the first account of the disease was published by Clarke. The malarial origin of kala-azar was upheld by Rogers as late as 1897, and even two years later Ross supported the theory, though he was of opinion that there was some superadded secondary infection. It is to the credit of Stephens, however, that in 1894 he recognised that the disease was distinct from malaria, though he considered that it was allied to it. Other observers attributed the condition to ankylostomiasis and a malignant form of Mediterranean fever, but it was not until Leishman discovered the parasitic bodies with which his name is associated that the true cause became evident. In 1900 Leishman found certain parasites which are now known as Leishman-Donovan bodies in films taken post-mortem from the spleen of a soldier who died from fever contracted at Dum-Dum, but he did not publish his discovery until 1903. A few months later in the same year Donovan observed the same parasites in the blood of a case of splenomegaly obtained by splenic puncture during life. This observation was confirmed by Manson and Rogers, and from that time the true nature of the disease has been established.

The parasite, or Leishman-Donovan body, is round or oval in shape with a diameter of 2 to $3.5\ \mu$ and has a granular cytoplasm. The nucleus is oval and centrally placed in the resting stage, but is elongated and situated at the periphery prior to division. There is also present a smaller chromatin mass, usually in the form of a short rod, which is either perpendicular to, or at a tangent with, the nucleus and stains more readily than the nucleus itself. The bodies are found in the endothelial cells in the capillaries of the liver, spleen, bone-marrow, lymphatic glands and mucosa of the intestine, and more rarely in the circulating blood shortly before death. The parasites in man are almost invariably intra-cellular: they divide, causing the containing cell to enlarge and after disintegration of the nucleus to disrupt. The organisms thus set free enter other endothelial cells or are taken up by the leucocytes. The parasites are probably conveyed by biting insects, such as the bug, in the body of which according to Patton they develop into flagellated forms. Artificially, they may be cultivated at a temperature of 20 to 22°C . in blood to which sterile citrate of sodium solution has been added to prevent coagulation. They are then seen to enlarge very rapidly; the cytoplasm becomes opaque and vacuolated, and when the bodies attain a size of 7 to $9\ \mu$ they assume a pyriform shape

and become flagellated. They never present, however, an undulating membrane as is the case with trypanosomes. The flagellated forms are 12 to 20 μ in length and multiply by longitudinal fission, sometimes so finely as to resemble spirilla. All attempts to transmit the parasites of the Indian form of the disease to animals have hitherto failed, but in man the disease is probably spread by means of bugs. This accounts for the fact that it is the poorer class of both Europeans and natives which is principally attacked and for the tendency of the disease to run in families. Both sexes are affected and at all ages, though the Indian kala-azar is chiefly found in adults and the Mediterranean form in young children. Unlike malaria this disease shows a predilection for the acclimatised ; in them it is as severe as in new-comers.

Kala-azar is endemic in India, especially in the Eastern parts, and in Ceylon. It is also found in China and Arabia and along the Mediterranean coasts in Egypt, Tunis and Algeria, and in the Soudan. Cases have been reported in Crete, Greece, Sicily and Malta, and as far north as Naples and Spain. The disease at times becomes epidemic, but the spread of infection on the whole is slow. It tends to die out as it spreads, being endemic in a given area for a period of about six years.

The incubation period is difficult to determine and appears to vary as a rule from three weeks to several months, though less than ten days has been known. The attack commences with a high fever, preceded it may be by a rigor and sometimes by vomiting. The initial pyrexia is intermittent, or more frequently remittent, and the temperature-chart may show two remissions in the course of twenty-four hours, which is said to be characteristic of the disease. The fever lasts from two to six weeks or longer, and then the temperature declines. During this time the liver and spleen enlarge, varying in size at first with the fluctuations of the temperature : some tenderness of these organs may also be observed. Then follows a period of comparative apyrexia and improvement, which is succeeded by a further attack of fever and a renewed increase in the size of the liver and spleen. Spells of fever and apyrexia may recur for months, unchecked by quinine or other drugs, until finally a low form of fever with a temperature rarely above 102° F. becomes more or less persistent.

As the disease progresses the patient becomes anæmic and markedly emaciated with a large protuberant abdomen, through the wasted wall of which the outlines of the enlarged liver and spleen may be seen. Ascites may be present and œdema of the legs

frequently occurs. In many cases the skin acquires a peculiar earthy-grey colour, and the hair is dull and brittle and may fall out. Hæmorrhage may occur from the mucous membranes and under the skin, but the anæmia in uncomplicated cases is only of moderate severity. The erythrocytes, as a rule, number over 2,500,000 per c.mm. and not infrequently over four millions. The chief change, however, is a leucopenia, especially of the polymorphonuclears, the lymphocytes and large mononuclears being relatively increased. The coagulability and alkalinity of the blood are both decreased. The tongue is often uniformly clean, even during the periods of pyrexia, and the appetite and digestion, as a rule, are good. The condition may continue for months or even as long as two years, but the ultimate prognosis is extremely bad, the mortality being about 96 per cent. Death occurs from asthenia or from some complication, such as dysentery, tubercle or pneumonia.

The pathological changes consist of a great enlargement of the spleen which is firm and of a deep red colour and may show perisplenitis. The trabeculæ are thickened, and the pulp is increased and full of blood. Crowds of Leishman-Donovan bodies are present in the mononuclear cells and can be seen in smears. The liver is frequently enlarged and is brown or mottled on section: cirrhotic changes may be present. The portal capillaries are dilated, and parasites in abundance can be seen in the large mononuclear cells which are either attached to the walls or free within the lumina. The liver-cells are often degenerated, but no parasites are found within them. In the bones the yellow marrow is converted into red and is packed with parasite-laden cells. Ulceration of the intestines frequently occurs: in these lesions the parasitic bodies are present. They are also to be found in ulcers of the skin and in the lymphatic glands. In the kidney the bodies are occasionally met with in the blood-vessels, but never in the epithelium of the tubules.

The diagnosis depends entirely upon the blood-examination and the presence of Leishman-Donovan bodies. In this way alone can the disease be distinguished from leukaemia, malaria or Banti's disease.

Treatment is very unsatisfactory. Intra-muscular injections of atoxyl daily or every alternate day in doses up to 3 gr. seem to afford a slight hope of success. Vigorous quinine treatment is also recommended. Castellani and Chalmers report* an apparent

* 'Manual of Tropical Medicine,' Castellani and Chalmers, 2nd edition, p. 957. Frequent reference has been made to this work in compiling this account of the disease.

recovery after the administration of quinine sulphate (30 gr.) and euquinine (30 gr.) daily by the mouth together with a daily intramuscular injection of quinine hydrochloride (15 gr.) alternating with one of quinine cacodylate (4 gr.) Salvarsan has been used with but little success.

A form of the disease occurring in young children under the age of five years has been described as Infantile kala-azar. It is stated to occur chiefly along the Mediterranean coasts, and also to be found in dogs, whereas the Indian form is not. It is highly probable, however, that the two varieties are identical, the disease affecting various populations in a different manner, perhaps on account of differences in environment. The parasites are morphologically indistinguishable, and both children and adults are now known to be attacked wherever the disease is rife. Another form of febrile splenomegaly also occurs in the tropics, and has been termed Pseudo-kala-azar. These cases are indistinguishable clinically from true kala-azar, but in them the Leishman-Donovan parasites have not been found either during life or post-mortem, and its ætiology is at present unknown. Whether it is a separate disease remains to be proved.

Organisms closely resembling Leishman-Donovan bodies are also found in the condition known as Oriental sore or Delhi boil. In the human body they do not differ morphologically from the parasite of kala-azar, though certain minor differences have been described in the flagellated forms in cultures. If the organism is the same it must have lost some of its virulence, as in Oriental sore the prognosis is good, and the disease is very rarely fatal in itself. It is generally thought, however, that the parasite of Oriental sore, *Leishmania tropica*, is specifically distinct.

The case which I have to report was in many respects typical of the disease. The patient,* a boy, aged 5 years, was admitted into the Evelina Hospital for Children on December the 11th, 1913. He was the eldest of three children, the others being alive and well. His father, a soldier, had contracted kala-azar in Calcutta a year previously, and had died from that disease shortly before the boy left India. There was no history of the patient having had any illness prior to March, 1913, when he was taken ill while in Calcutta with fever and loss of appetite, and seemed to lose flesh. The motions at that time were white, but otherwise normal. He landed in England in June, and contracted whooping-cough. The abdomen was then for

* The case was shown at the Section for the Study of Disease in Children of the Royal Society of Medicine on January the 23rd, 1914.

the first time noticed to be enlarged. Subsequently he lost weight rapidly, and the size of the abdomen still further increased.

On admission the child was much wasted, especially in the limbs and chest, and was very anæmic. The cheeks presented a hectic flush, but the skin showed no hyper-pigmentation. The tongue was thickly furred. In the neck, axillæ, and groins the lymphatic glands could be felt slightly enlarged, and were hard and discrete. The thoracic viscera were normal. The abdomen was greatly enlarged, measuring $24\frac{1}{2}$ in. in circumference, and a small quantity of ascites appeared to be present. The liver dulness commenced above at the nipple-level, and the lower edge extended to 3 in. below the costal margin. The spleen was enormous, the anterior border, which was very thick, reaching to the middle line, where a notch could be felt just above the level of the umbilicus, while the lower pole filled practically the whole of the left iliac fossa. The urine and motions were both normal. The blood-count showed: Erythrocytes 3,220,000 per c.mm., and leucocytes 2200, of which polymorphonuclears amounted to 46 per cent., lymphocytes 38 per cent., large mononuclears 12 per cent., and transitionals 4 per cent.; the hæmoglobin was 66 per cent. The coagulation-time of the blood was diminished, being twelve minutes—that of normal blood being eight to nine minutes. Leishman-Donovan bodies were found in the blood obtained by puncture of the liver, but were not present in the peripheral circulation.

The temperature on admission was raised, and for the first week it presented a remittent character with intermissions varying between 97.4°F . and 103.4°F ., but the double daily remission was not very evident. The pulse and respiration rates were correspondingly increased, the former fluctuating between 120 and 168 per minute, while the latter was from 32 to 68. The patient, to commence with, was put on iron with increasing doses of arsenic. Weighing at first 15.3 kgrm., he lost during the first nine days 1.1 kgrm., but by January the 19th, 1914, he had regained his loss. The temperature after the first week became lower, being scarcely ever above 101°F ., and on December the 23rd it was practically normal, and remained so with only slight rises for just over a week. The boy's general condition showed but little change, though he was restless and fretful at times, owing to a troublesome cough and occasional toothache. He slept well, however, and his appetite was good.

At the beginning of January the temperature again took on a remittent character, though not so high as at first, the maximum being 101.4°F ., and œdema of the legs and scrotum became evident. On January the 20th the patient was put on to 1 gr. of quinine

sulphate thrice daily, the dose being increased subsequently to 2 gr. and then 4 gr. His weight further increased to 15·5 kgrm., but after February the 2nd it began to drop again, and atoxyl treatment was commenced on February the 7th, beginning with an injection of $\frac{1}{4}$ gr. into the muscles of the left thigh. This was increased by $\frac{1}{4}$ gr.



The patient, showing the enormous size of the spleen.

every three or four days, $\frac{1}{2}$ gr. being given on the 11th, $\frac{3}{4}$ gr. on the 14th, and 1 gr. on the 18th. The boy continued to lose weight, however, and on the 16th he had fallen to 14·2 kgrm. again, but during the next fortnight there was an improvement, and his weight gradually rose to 14·76 kgrm. On February the 21st a dose of atoxyl (gr.j) was repeated by injection into the right thigh. On the 24th and 28th $1\frac{1}{2}$ gr. were given, and on March the 4th 2 gr. The patient now began to lose ground rapidly. He became very drowsy at times, and suffered from otorrhœa and a profuse nasal discharge, which proved

to be non-diphtheritic. The cough was very troublesome, and there was considerable respiratory distress. The temperature became normal for a few days at a time, but for the most part it ranged between normal and 101° F., and so it continued until the end. Injections of 2 gr. of atoxyl were given on March the 7th, 11th, and 18th, by which date the weight had fallen to 13·26 kgrm. Epistaxis supervened, together with petechial hæmorrhages in the skin, and a final dose of atoxyl (gr. ij) was injected on March the 21st, the weight having decreased by a further ·2 kgrm. Two days later the patient died quietly in an asthenic condition, almost exactly a year after the commencement of his illness. Altogether twelve doses of atoxyl were given in six weeks, but without any appreciable result. The short periods of apyrexia and improvement were merely transitory, and could not be attributed to any beneficial action of the drug.

A post-mortem examination was performed fourteen hours after death, and for the pathological report I am indebted to Dr. A. N. Leatham. On opening the peritoneum fully three-quarters of the abdominal cavity was found to be occupied by the enormous liver and spleen, which together made up close upon one-sixth of the total body-weight. A small quantity of serous fluid was present. The stomach was entirely hidden from sight, being tucked away under the left lobe of the liver, and only a few coils of intestine were visible in the pubic and right iliac regions. The *liver* weighed 39 oz. (1·11 kgrm.), and was firm and dark in colour. No perihepatitis was present. Microscopically the outlines of the liver-cells were indistinct and the protoplasm was granular; the nuclei were mostly distinct and stained normally. In places the liver-cells had disappeared entirely. The capillary vessels were dilated. The *spleen* weighed $31\frac{1}{2}$ oz. (900 grm.), and was firm and of a dark purple colour. There were no infarets and no perisplenitis on the surface. Sections showed a considerable increase of the connective-tissue stroma, with a diminution in number of the lymphoid cells. The Malpighian bodies were few, small, and ill-defined. The blood spaces were dilated. The *mesenteric glands* were considerably enlarged, but the *stomach* and *intestinal tract* were normal. The *kidneys* (5 oz. each) were tough and rather pale. Microscopically the protoplasm of the cells showed granular degeneration, but the nuclei remained more distinct than they usually appear in cloudy swelling. The tubules were slightly dilated. The *pancreas* showed no abnormal appearances. The *cervical* and *bronchial lymphatic glands* were enlarged but not tuberculous. The *pericardium* contained a small quantity of clear fluid, and the *heart* was slightly dilated, the muscle being pale and flabby;

the valves were normal. About an ounce of straw-coloured fluid was present in each *pleura*. The *lungs* were markedly emphysematous in their upper portions, while the bases were congested and presented areas of collapse.

A CASE OF HYPERPLASTIC TUBERCULOSIS OF THE TUNICA VAGINALIS.

By FREDERICK C. PYBUS, M.S., F.R.C.S.,

Surgeon to the Hospital for Sick Children, Newcastle-on-Tyne, etc.

THE patient, a boy, aged 3 years, was sent to me at the Hospital for Sick Children with a diagnosis of left inguinal hernia.

The *history* was as follows: The mother stated that soon after the birth of the child she noted a swelling in the left side of its scrotum, but paid little attention to it. When the child was a year old the father noticed the swelling, and advice was then sought. Her medical attendant told her that there was "water on the testicle," so the condition was then recognised as a hydrocele. The mother stated that the swelling varied in size, and was largest after the child had been sitting for some time. There was no pain at any time, and no abdominal symptoms had ever been present.

As the swelling did not entirely disappear after the application of lotion, the child was sent to another hospital, where a diagnosis of congenital hydrocele was made, and an operation recommended; this, however, was not carried out. At the age of three years the child was sent to me.

On examination, the only abnormality discovered was a swelling in the left scrotum, which was obviously of the testicle, was globular in shape, hard, non-translucent, and it was impossible to distinguish the testicle and epididymis. The cord was slightly thickened, as one finds in cases of hernia, but no abdominal contents appeared to enter the scrotum.

A diagnosis of tuberculosis of the testicle was made, although no other foci could be discovered.

An *exploratory operation* was performed in April, 1912, an incision being made over the inguinal canal and the testicle drawn up from the scrotum.

A globular tumour was found about the size of a pigeon's egg. It was uniformly hard, and even now no distinction could be made between the testicle and the epididymis. It was impossible to find

the tunica vaginalis, so an incision was made on the anterior surface of the swelling.

After going through some new tissue, about $\frac{1}{4}$ in. thick, the tunica vaginalis was opened and the body of the testicle discovered, as shown in the illustration. As it was impossible to dissect off the thickened tunica, castration was performed, the spermatic cord being ligatured at the internal ring and the inguinal canal completely closed.

The child made a natural recovery, and at the present time, two years after the operation, remains quite well.



The thickened tunica vaginalis laid open, showing the normal testicle and Globus major and minor of the epididymis. The thickening was limited to the parietal layer. A portion of the thickened tunica has been removed for microscopic examination.

The specimen shows a remarkable thickening of the tunica vaginalis, whose inner surface is slightly granular. The thickening is limited to the parietal layer. The sac was empty, neither fluid nor pus being present. The testicle and epididymis can be seen, and have a normal appearance. On further examination, it was found that by minute dissection it would have been possible to remove most of the diseased tunica without damage to the testicle, epididymis, or its vessels. These latter lay in a deep groove on the posterior surface. A narrow peritoneal sac was present in the cord, and was continuous with the

tunica, although the canal was obliterated about half an inch above the testicle. The rest of this funicular process showed no disease.

Microscopic examination of the tunica made by Dr. Sewell, Pathologist to the Hospital for Sick Children, showed it to consist of hyperplastic tuberculous tissue containing numerous giant-cell systems.

There seems no doubt that the tunica vaginalis was infected from the abdominal cavity, although no symptoms of such disease have been present and no signs have been discoverable since the child came under my observation. In the early stage the symptoms were those of an ordinary congenital type of hydrocele, although at a later date the apparently enlarged testicle alone made diagnosis difficult, as has been pointed out.

FOUR CASES OF RECTAL POLYPUS OCCURRING IN ONE FAMILY.*

By ARTHUR F. HERTZ, M.D., F.R.C.P.,

Physician to Guy's Hospital.

THE parents of the patients are both alive and healthy and nothing abnormal was found in either of them on rectal examination. It is interesting to note, however, that in the first report of K. W—, when she was in the Hospital in 1906, it was said that the father was supposed to have a growth of the rectum. On being questioned recently with regard to this he did not know to what it referred, as he had no recollection of having suffered from intestinal symptoms.

There are four children. The eldest, H. W—, is aged 17 years. He is in the Navy, and I have not had an opportunity of seeing him. When aged 11 months, however, he suffered severely from hæmorrhage of the bowels, which continued for several months, and was so severe at one time that he nearly died. Since the age of 3 years there has been no return of hæmorrhage. His history is of importance only when taken in association with that of the other three members of the family, as it then appears probable that he also has a rectal polypus.

W. W—, aged 13 years, had pain on defæcation and passed a little blood on two occasions in 1910. From that time he had frequent diarrrhœa with occasional vomiting after meals. His

* A paper read before the Surgical Section (Sub-Section of Proctology) of the Royal Society of Medicine on May the 13th, 1914.

mother brought him to see me in November, 1913, and said that she thought that he had a rectal polypus, as his symptoms were like those of his younger brother and sister, who had already been operated upon. He had, however, passed neither blood nor mucus, and there did not seem to be much evidence in favour of this diagnosis, but on rectal examination I found a small polypus on the posterior wall about one inch from the anal orifice. This was removed a few days later, and the patient has since remained well.

K. W—, is now aged 12 years. She was admitted into Guy's Hospital in September, 1906, for vomiting, constipation, and the passage of blood, which had first been noticed a fortnight before. She was rapidly relieved, but in November of the same year she was re-admitted with abdominal pain and pyrexia. It was thought she might be suffering from tuberculous peritonitis. She very slowly improved and left the Hospital three months later quite well. I first saw her in January, 1910, when she was brought to see me because of passing blood. I could not make a satisfactory rectal examination then, as her rectum was full of fæces. After an enema had been given with a good result, a proctoscope showed a small polypus on the posterior wall of the rectum about two inches from the anal canal, which was also quite easily felt by the finger. It was removed, and the patient remained well until 1912, when she returned with constipation and a history of having again passed a little blood.

The sigmoidoscope now showed nothing abnormal except slight catarrhal proctitis, which was clearly due to dyschezia, as an X-ray examination showed that the rectum was reached in nine and a half hours, and that the fæces then remained indefinitely in the rectum. By means of graduated enemata the dyschezia was cured.

J. W—, aged 8 years, passed some blood and mucus in January, 1913. He had occasional pain on defæcation with a tendency to diarrhœa. I saw him at the end of September, 1913, and found a small polypus on the posterior rectal wall one inch from the anal orifice. He has remained well since it was removed a few days later.

I have not been able to find any record of a similar group of cases of rectal polyp occurring in one family.

British Medical Association.

SECTION OF DISEASES OF CHILDREN, INCLUDING ORTHOPÆDICS.

Eighty-second Annual Meeting, held in Aberdeen, July the 28th to 31st, 1914.

Congenital Dislocation of the Hip.—Mr. T. H. OPENSHAW opened a discussion on this subject. He supported the view that the condition was due to intra-uterine pressure. Treatment should be commenced as soon as the diagnosis was made. The older the child the worse the deformity and the less successful the results. For children under five years of age, reduction by simple manipulation under an anæsthetic was possible; for older children, preliminary tenotomy of the muscles and weight extension was necessary. He did not think it possible to replace the head of the femur directly into the acetabular cavity, but by retention at the acetabular site for about six months it subsequently attained its correct position. Failures were chiefly due to the post-operative position being continued for too short a period. Open operation was necessary when Lorenz's method had failed, in cases over twelve years of age and in cases with a great degree of external rotation.

Practical Treatment of Lateral Curvature of the Spine.—Mr. PAUL B. ROTH said that scoliosis was due to a general weakness of muscles, ligaments and bones. It was postural at first and only became structural after a long period. Postural scoliosis was completely curable. Structural scoliosis could be arrested, but never cured. Treatment depended on training the patient's muscular strength and postural sense and on attention to the skeletal deficiency. Exercises and muscular training were the basis of treatment in all cases, as plaster only increased the weakness.

Treatment of Torticollis.—Mr. PAUL B. ROTH advocated subcutaneous tenotomy of the sternal origin of the sterno-mastoid. It was rarely necessary to divide the clavicular head and never necessary to divide the deep fascia. It was not a serious operation like the open method, and avoided an unsightly scar. Exercises for prolonged periods were useful when scoliosis was present. Retention apparatus was quite unnecessary.

The Thymus Gland in its Clinical Aspect.—Dr. A. E. GARROD said that the thymus was a gland of internal secretion and its extirpation in animals led to definite symptoms, viz. adiposity followed by cachexia and death in coma, bone changes similar to those in rickets and hypertrophy of the associated glands. The thymus might play a part in rickets and in a form of cretinism associated with adiposity, and its correlation with other glands, especially the genital glands, was important. Clinically, disease of the thymus leads to thymic death, thymic asthma and status lymphaticus. Many of the pathological manifestations of status lymphaticus were inaccessible clinically. Enlargement of the lymphatic tissue at the base of the tongue and of the thymus were the most important clinical signs. In older children other signs were available, mainly abnormalities of sexual characters. Treatment had hitherto been directed to removal of the gland or to its reduction by

X-rays. If it were proved that the defect was one of internal secretion, the proper treatment would probably be found in some extract from the ductless glands.

Technique of Thymectomy.—Mr. A. MacLENNAN had had encouraging results in eight cases. There were two types of operation: (1) Intracapsular enucleation, a simple and safe operation, which was indicated when the gland was normal or only slightly enlarged. (2) Resection of the manubrium, which was indicated when enlargement or adherence of the thymus rendered larger exposure necessary for its complete extirpation.

Appendicitis and Status Lymphaticus.—Mr. D. P. WILKIE quoted cases illustrating the dangers to which thymic subjects were exposed when attacked by acute abdominal infections. In two cases of appendicitis in which operation was performed within eight hours of the onset, and in which the appendix was not gangrenous nor perforated, death occurred in twenty-four and forty-two hours respectively from toxæmia. Post mortem both showed signs of status lymphaticus. In a third case, in which status lymphaticus was also found post mortem, appendicectomy was performed in the subacute stage, and was followed by fatal collapse as the sutures were being inserted. Chloroform had only been used to help induction and ether was the main anæsthetic. The possibility of status lymphaticus was a further argument against the use of chloroform in childhood.

The Association of Abnormal Types of Pneumonia and of Tuberculosis in Children with Thyro-lymphatic Hyperplasia.—Dr. C. McNEIL (Edinburgh) said that status lymphaticus was a disease involving all the ductless glands, and commonly present in cases of sudden death in infants, being frequently associated with capillary bronchitis or pneumonia. In a recent epidemic of sudden deaths with coma in an industrial school near Edinburgh (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, XI, p. 133), fulminant bronchitis and status lymphaticus had been present in every case. In the same school scrofula had been present, which he regarded as due to tuberculosis in subjects with status lymphaticus. He described scrofula as a constitutional disorder of childhood, characterised by catarrh, enlarged glands with tuberculous infection, skin rashes and tuberculosis of bones and joints.

Some Manifestations of Congenital Syphilis and their Treatment.—Dr. L. FINDLAY and Dr. MADGE ROBERTSON referred to a condition of chronic eczema of the angles of the mouth and mucous membrane of the lip of syphilitic origin. Thirty-seven cases all gave a positive Wassermann's reaction. Of 11 cases of congenital heart-disease this reaction was positive in 7 of the patients, and in the mothers of 2 others. Of 15 cases of cerebral diplegia in which a history of injury was obtained 5 gave a positive reaction, and of 10 with no history of injury 4 gave a positive reaction. A positive reaction was also obtained in 59 per cent. of cases of mental deficiency. The speakers advocated the use of scalp veins for intravenous injections of salvarsan. The mortality of cases treated with salvarsan and mercury was considerably less than that of those treated by mercury alone.

Chronic Pulmonary Tuberculosis in Children.—At a combined discussion of the Sections of Diseases of Children, of Medicine, and of Electro-therapeutics and Radiology, Dr. D. B. LEES laid special stress on

six typical dull areas found in tuberculous patients early in the disease (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 529). He recommended that careful records of these areas should be made each month. In infancy and childhood tuberculosis tended to spread by the lymphatics much more than it did in adults. Skiagrams should be taken by the shortest possible exposure, and attention should be concentrated on the fine apical mottlings. Peribronchial fibrosis, and calcified bronchial glands, so commonly seen in pulmonary skiagrams, were of much less importance.

Abstracts from Current Literature.

Medicine.

A variety of anæmia observed in rickety twins ('*Arch. des Mal. du Cœur*,' 1914, vii, p. 433).—**E. Lenoble**.—Two premature hypotrophic twins at the age of ten months, as the result of malnutrition, presented signs of rickets complicated by anæmia, and in one by enlargement of the spleen. Wassermann's reaction was negative. The changes in the plasma consisted in delay in the separation of the clot from the serum and in the milky appearance of the serum. The formed elements showed anisocytosis of the red cells without poikilocytosis, an abnormal pallor of the centre of most of the cells, and the usual changes in the hæmatoblasts, which were but slightly diminished in number and little affected in shape and physiological characters. The chief anomaly was the presence of myelocytes, which ranged from 0·10 to 1·10 per cent. The diminution in the number of red cells was very slight; the hæmoglobin was chiefly affected. Recovery took place under appropriate diet and martial medication.

J. D. ROLLESTON.

Eosinophilia and the exudative diathesis ('*Monatsschr. f. Kinderheilk.*,' 1914, xii, p. 603).—**A. Kroll-Lifschütz** finds that: (1) Eosinophilia occurs in infants and children with eczema and relapsing urticaria. (2) After disappearance of the cutaneous symptoms eosinophilia persists, but not to so great an extent as when the cutaneous symptoms existed. (3) Eosinophilia is also present in older children who have shown signs of the exudative diathesis in infancy, but at the present time are free from them. (4) From (2) and (3) it is manifest that eosinophilia is a constant accompaniment of the various cutaneous manifestations of the exudative diathesis, and is also found in children who had shown at one time such cutaneous manifestations. (5) Geographical tongue has nothing to do with eosinophilia. (6) In many cases of relapsing pharyngitis and bronchitis in children without typical asthmatical symptoms, and in many unexplained dyspepsias, which Czerny considers as due frequently to the exudative diathesis, no eosinophilia is found.

F. R. B. ATKINSON.

Eosinophilia in chorea ('*New York Med. Journ.*,' 1914, c, p. 225).—**S. S. Leopold**, as a result of the examination of twenty cases, finds as follows: (1) Eosinophilia is present in the majority of cases of chorea. (2) It is present almost invariably in recurring cases. (3) The absence of eosinophilia in doubtful cases of chorea may prove of diagnostic significance. (4) Its presence is in favour of the theory of the infectious origin of chorea.

F. R. B. ATKINSON.

Hæmophilia (*Birmingham Med. Rev.*, 1914, LXXV, p. 254).—**C. G. Teall** records nine cases, in only two of which a family history of hæmophilia was obtained: three occurred in adults and six in children. Five were boys, aged from 5 to 10 years, and one a girl, aged 12 years. She was a sporadic case, but the diagnosis of hæmophilia rested on her bruising easily, in small cuts always bleeding excessively and on her having effusions into joints.
J. D. ROLLESTON.

Three cases of infantile scurvy (*Arch. de Méd. des Enf.*, 1913, xvi, p. 128).—**J. Comby**.—(1) A male infant, who had been brought up first on condensed and then on sterilised milk, remained healthy to the age of eleven months. He then became unable to stand upright, and began to cry out with pain in the lower limbs, and to show petechiæ about the knees. The gums round the seven erupted teeth were swollen and bleeding. Fresh milk and orange juice were given. After two days' treatment the gums were much improved, and in ten days the child was cured. (2) A girl, aged ten months, was brought up on sterilised milk. She then developed malaise, feebleness of the limbs and a swelling on the left tibia. By a similar treatment to that described above a cure was effected within fourteen days. (3) A girl, aged fifteen months, began to scream, and refused to walk. The gums were normal, and there were no subperiosteal hæmatomata. The child had been brought up on humanised milk. A similar diet to that prescribed for the other cases was adopted, and within three days she could walk and had ceased to scream. Scurvy usually appears during the last six months of the first year of life. All the eighteen cases collected by Comby had pseudo-paraplegia, and all were rapidly cured by simple means.

CHRISTOPHER ROLLESTON.

An unknown form of disease (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 1).—**A. Niemann**.—A female child, aged 17 months, ill since the second month from birth, showed open fontanelles, inability to walk, pale skin, pale brown face, bluish spots extending from the twelfth dorsal vertebra downwards, oblique position of the eyes, snoring breathing, and huge abdomen filled with an enlarged liver and spleen. Blood normal. Wassermann positive. Mercury and potassium iodide were given, but no improvement occurred, and death took place four months afterwards. Necropsy: The normal structure of the spleen was absent, and the normal cells very few in number. The cells were very large, irregular, and often separated from each other, and contained a small, round nucleus. The protoplasm was very bright and contained vacuoles. The liver showed the same condition and could hardly be differentiated from the spleen. The abdominal glands as a whole were normal, but contained the same kind of cells. The author proposes the name "large-celled glandular metamorphosis" for the disease.

F. R. B. ATKINSON.

Two cases of primary splenomegaly in later childhood (*Thèses de Paris*, 1913-14, No. 309).—**Anna Safontzeff** records two cases, one in a girl, aged 11½ years, and the other in a boy, aged 14 years, of splenic anæmia passing into the stage of Banti's disease, which are regarded as of special interest on account of the rarity of the disease at this time of life. Ten other cases of the disease at about the same age are collected from literature; none of them from British sources. There is a discussion of splenic anæmia and Banti's disease on the usual lines.

H. D. ROLLESTON.

Syphilis of the liver with the picture of Banti's disease (*Clin. Journ.*, 1914, XLIII, p. 462).—**Sir W. Osler**.—Syphilis of the liver may closely resemble Banti's disease, the splenomegaly, anæmia, and hæmatemesis completely overshadowing the hepatic features. Osler records two examples in adults, and the following case in a boy, who was eleven years old at the time of his death. His first symptom was enlargement of the spleen. Some years later he developed nodes on the shins and syphilitic arthritis of the left knee. The liver was slightly enlarged, but the blood count was practically normal. Subsequently the liver decreased in size. Two months before death he developed ascites, and later bleeding from the gums and hæmatemesis. Anæmia then became pronounced, the red cells sinking to below 2,000,000. The necropsy showed the usual features of anæmia, œsophageal varices, a greatly enlarged spleen, and a liver very extensively affected by syphilis.

J. D. ROLLESTON.

The ætiology and pathology of splenic anæmia (*La Pediatria*, 1913, XXI, p. 748).—**G. di Cristina** gives details of a further series of twelve cases in which he specially investigated the question of tubercle and syphilis. He is of opinion that syphilis is the predominant factor in the pathology of infantile splenic anæmia, acting either directly, as in the great majority of cases, or indirectly as cause of congenital dystrophy. Tuberculosis is met with in a fair proportion of cases associated with syphilis, and contributes in aggravating the condition of the hæmopoietic organs. Tubercle alone may cause infantile and splenic anæmia, but is met with only in a limited number of cases. The pathogenic mechanism has not yet been sufficiently investigated. It is probable that there occurs a condition of chronic intoxication of the tissue concerned in the hæmopoietic function, either by means of poisons which pass through the placental filter or are eliminated by the milk, or that a small focus of tubercle is present in the infantile organism which deteriorates the tissues with its toxic products.

VINCENT DICKINSON.

Acute lymphatic leukæmia (*Arch. of Ped.*, 1913, XXX, p. 805).—**F. Huber** gives an account of this disease and reports three cases. The first was a boy, aged 14 years, who died about seven weeks after the onset of symptoms. He was very anæmic and had had epistaxis. The cervical and inguinal glands were enlarged, though not tender. The heart's action was rapid and irregular, and there was marked myocardial weakness. The spleen was greatly enlarged and the liver considerably so. The red blood-cells numbered 2,000,000, and the white 800,000 per c.mm.; hæmoglobin, 40 per cent. Severe attacks of epistaxis and hæmatemesis occurred, and the patient died in a markedly asthenic state. No autopsy was obtained. The second case was a boy, aged $4\frac{3}{4}$ years, whose symptoms began after an injury to a finger, with feverishness, cough, and marked enlargement of the cervical glands. The axillary and inguinal glands subsequently became affected, and a purpuric rash appeared. The patient presented a wax-like anæmia and exophthalmos due to hæmorrhage into the orbits. The liver and spleen were both enlarged to the level of the umbilicus. The blood showed: Red cells, 1,400,000, white, 31,200, per c.mm. (small mononuclears, 33 per cent.; large, 60 per cent.), and on the day of death, six days later, red cells, 1,160,000, white, 8600 (small mononuclears, 5 per cent.; large, 88 per cent.). After hæmorrhages from the bowel and oro-pharynx the patient died about the twenty-third day of the disease. The third case was also a

boy, aged 9 years, who, subsequent to diphtheria, had attacks of "apparent suffocation" with pain about the heart and frequent chills. There was marked anæmia, herpes about the nose and lips and a spongy condition of the gums, with a large slough on the lower alveolar mucosa. The glands generally were enlarged, and the skin showed an icteroid tint of a hæmolytic nature. The heart-sounds were irregular and faint, and a myocardial murmur was present. The spleen was palpable and the liver slightly enlarged. The temperature was high and irregular, and the blood-count gave: Red cells, 1,370,000, white, 47,000, per c.mm. (lymphoid marrow cells, 42 per cent.; large lymphocytes, 25 per cent.; small, 20 per cent.); hæmoglobin, 35 per cent. Death occurred as the result of profuse hæmatemesis. No autopsy was obtained.

T. R. WHIPHAM.

Two cases of acute infantile leukæmia (*Arch. de Méd. des Enf.*, 1914, xvii, p. 254).—**M. Péhu and J. Chaliér.**—In the first case, a girl, aged 2 years, the symptoms consisted merely of a marked change in the general condition and a very considerable enlargement of the spleen. It was only towards the end of the disease that she developed ascites, enlargement of the liver, and ulceration of the tonsil. There were no hæmorrhages nor adenopathy. Blood count: Red cells, 4,217,000; hæmoglobin, 60 per cent.; white cells, 26,000. Differential count: Polymorphonuclears, 79·5; eosinophiles, 1·5; basophiles, 0; lymphocytes, 6; moderate-sized mononuclears, 4; large mononuclears and transitionals, 2·5; neutrophil myelocytes, 6·5; nucleated red cells, 1·5. There was a small degree of anisocytosis and poikilocytosis. The blood count thus resembled that of incomplete myeloid leukæmia or myeloid subleukæmia. In the second case, a boy, aged 5 years, the diagnosis of acute leukæmia was made before the blood examination on the generalised adenopathy, enlargement of the spleen, and tonsillar ulceration and rapid and serious involvement of the general condition. In many respects, however, the disease was atypical. The bucco-pharyngeal syndrome was merely represented by tonsillar ulceration. There were no hæmorrhages nor rise of temperature. On the other hand, there were considerable œdema of the face and limbs, and ascites. The enlargement of the spleen and lymphatic glands was pronounced. The blood count showed a marked myeloid reaction: Red cells, 3,200,000 to 2,594,700; hæmoglobin, 67 to 40 per cent.; white cells, 30,000 to 48,000. Differential count: Polymorphonuclear neutrophiles, 32 to 14 per cent.; eosinophiles, 25·5 to 3 per cent.; basophiles, 1 to 0 per cent.; transitionals, 8·5 to 1 per cent.; large mononuclears, 4 to 1 per cent.; lymphocytes, 6 to 70 per cent.; moderate-sized mononuclears, 6·5 to 10 per cent.; neutrophile myelocytes, 13·5 to 1 per cent.; basophile myelocytes, 0; nucleated red cells, 1 per cent. The writers regard this case as a transitional form between leukæmia and Hodgkin's disease. Both cases were fatal. No autopsy could be obtained in either.

J. D. ROLLESTON.

Acute lymphatic leukæmia after tetanus serum anaphylaxis (*Journ. Amer. Med. Assoc.*, 1914, lxii, p. 1473).—**E. J. Brown** reports the case of a boy, aged 14 years, who had previously had good health. Four weeks before he had been given a prophylactic dose of antitetanic serum for a slightly infected nail-puncture of the foot; over two years ago he had taken a similar dose of antitetanic serum for a similar nail-puncture of the foot. Within thirty-six hours after the second dose he developed a violent urticaria with large wheals and erythema, with vomiting and fever. After

a few days with decline of anaphylaxis a general adenitis of the cervical, axillary and inguinal glands was noticed, and the spleen and liver enlarged rapidly, the spleen, after two weeks, reaching the umbilicus; anæmia became profound, fever of moderate grade ensued with great prostration, and death from hemiplegia occurred at the end of four weeks. The blood examination, one week before death, showed hæmoglobin, 35 per cent., and white cells 420,000, consisting of large lymphocytes, 77 per cent., small lymphocytes, 18 per cent., polynuclears, 3 per cent., and eosinophilic polynuclears, 2 per cent. Among the red cells there were numerous megaloblasts and poikilocytosis. A necropsy was not obtained. The writer records this case only with the idea that it might help to solve some of the problems of the relation of anaphylaxis to other diseases, and does not pretend to assert that because the acute leukæmia followed the anaphylaxis in a possibly sensitised subject, it was produced by the second dose of tetanus serum.

T. R. WHIPHAM.

Benzol treatment in two cases of leukæmia (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 921).—**F. H. Smith** reports two cases of leukæmia, both of which were benefited by treatment with benzol. The first is described as a case of spleno-myelogenous leukæmia and was a boy, aged 13 years. The spleen was of enormous size, but the liver did not appear to be enlarged. The leucocytes numbered 372,000 per c.mm. A differential count was not made as it "seemed impossible," but it was noted that many myelocytes, eosinophils and polymorphonuclear elements were present. The red cells were 3,072,000 and no nucleated cells were seen. Hb. (Sahli) 55 per cent. For the first few days after commencing the treatment with benzol the leucocytes increased in number, the highest record being 499,000, but thereafter they slowly diminished until at the end of seven and a half weeks they were only 6600. The red cells at that time numbered about $5\frac{1}{2}$ millions. The benzol was then suspended, except for one short spell, and the leucocytes have ranged for the last two months between 8400 and 11,800. A differential count does not appear to have been made until after the treatment had been stopped, when the myelocytes were found to be 4 per cent. and the eosinophils 1 per cent. A decrease in the size of the spleen was coincident with the fall of the leucocyte count until at last it was only 1 in. below the costal margin. The initial dose of benzol was five drops three times a day. This was gradually increased, without any untoward symptoms, to twenty-four drops, and the dose was finally reduced to half that quantity. The second case was a coloured man, aged 56 years, the subject of chronic lymphatic leukæmia. The leucocytes numbered about a million per c.mm. and were nearly all small mononuclears. In this instance, treatment with benzol up to doses of 35 drops over a period of two months failed to produce any improvement.

T. R. WHIPHAM.

Chloroma (*Am. Journ. Med. Sc.*, 1914, CXLVII, p. 836).—**Walls and Goldsmith** record a characteristic case in a white male, aged 5 years, with an entire illness of three months' duration. Proptosis, tremors about the head, enlargement of the liver and spleen, gingivitis and necrotic pharyngitis were present. The blood showed moderate anæmia, leucocytes 9000–12,000, of which 80 per cent. were mononuclears, 4 per cent. of the total were myelocytes, and a small number of myeloblasts. This case is described as an example of myeloid chloroma. An extensive bibliography is appended, and

a general sketch of the subject is given. Chloroma is very closely bound up with acute leukæmia; and in a case of acute leukæmia, proptosis, tumours in the orbits, about the glabella and the temporal fossæ, justify the conclusion that chloroma will probably be found after death; but inasmuch as non-chloromatous growths sometimes occur in these situations in acute leukæmia, a dogmatic diagnosis cannot be made with certainty during life. The disease is acute, usually lasting two to four months, but a duration of fifteen months has been reported. Some examples of myeloid chloroma are quoted.

H. D. ROLLESTON.

Lymphocytic leukæmia (*Bristol Med.-Chir. Journ.*, 1914, xxxii, p. 147).—**E. C. Williams**, in recording a case in a boy, aged 3 years, draws attention to the following remarkable features: (1) The entire brain was riddled with hæmorrhages, some capillary, others massive; (2) the freedom of the heart-muscle from fatty change; (3) the terminal blood count showed that the white corpuscles, 98·7 per cent. of which were abnormal mononuclears, outnumbered the erythrocytes in the ratio of 62 to 38. Possibly Boycott's suggestion that in this condition some of the lymphocyte-like cells are really erythroblasts in the stage before any hæmaglobin is developed in the cytoplasm may help to explain this unusual count.

H. D. ROLLESTON.

The ætiology and vaccine treatment of Hodgkin's disease (*Journ. Amer. Med. Assoc.*, 1913, lxi, p. 2122).—**F. Billings** and **E. C. Rosenow** confirm the findings of Bunting and Yates, and Negri and Mieremet in Hodgkin's disease. They have also isolated a similar Gram-staining, non-acid-fast, polymorphous diphtheroid bacillus from the lymphatic glands in twelve cases of lymphadenoma, and have found marked benefit following the injections of a vaccine. The organism was obtained in pure culture in only three cases, while in the rest it appeared in conjunction with a staphylococcus. Whenever possible, a portion or all of two lymph-nodes were removed, one from the group involved the longest (usually the cervical region), and one from the group most recently involved (usually the inguinal region). In addition to planting small pieces of the lymph-node, emulsions in salt solution were prepared by grinding in a sterile motor in sterilised air and planting the emulsion on blood-agar, blood-serum slants (aerobically and anaerobically) and into ascites-dextrose agar. The latter method has the advantage of yielding earlier and more uniformly positive results. By this method the minimum number of viable organisms and a relative proportion of those present have also been determined. In this way it has been found that the lymph-nodes involved the longest in a given case, or those from cases of long standing showed more organisms and a relatively larger proportion of staphylococci, while the more recently involved lymph-nodes or those from the cases of shorter duration showed fewer organisms, but a relatively larger proportion of bacilli. The marked pleomorphic character of this organism as pointed out by Bunting and Yates was also noted. It has happened repeatedly that single colonies in the dextrose-agar, which showed bacilli only in smears, yielded in subcultures a pure culture of staphylococci aerobically, and forms of the bacillus either pure or in mixture anaerobically on the same medium. These facts suggest strongly that the associated staphylococcus is derived from the bacillus. The vaccines are prepared by growing the organism isolated on the surface of Loeffler's blood-serum, ascites-dextrose-agar or blood-agar slants for from twenty-four to

forty-eight hours. A suspension in salt solution is made, the clumps broken up as much as possible, and thrown down by fractional centrifugation. This clump-free emulsion is now standardised and heated to 60° C. (140° F.) for thirty minutes or one hour. Aerobic and anaerobic cultures are made on Loeffler's blood-serum, and these are incubated at least three days before the vaccines are used, to insure the sterility. Then phenol (carbolic acid), 0·5 per cent., is added, and the treated killed suspensions are placed in the ice-chest for use. Whenever staphylococci were found, an attempt was made to have the vaccine contain the bacilli and cocci in about the proportion found in the lymph-nodes. It is obvious, therefore, that an autogenous vaccine is to be preferred, although good results have been obtained with a vaccine prepared from a series of strains isolated from different cases. Seven patients were treated for long or short periods in hospital and were kept at rest. Five were under the care of physicians at home. Röntgenotherapy three times per week was applied to six patients at the hospital and was used with three of the patients under the management of others. Autogenous vaccine was used in all but one patient, who received the vaccine prepared from other patients. The vaccine was first given in the dose of from 5 to 10 millions and gradually increased to a maximum of 100 millions. The vaccine was given subcutaneously and repeated every five to seven days. In febrile patients the second or third dose has been associated with a reaction consisting of an increase of temperature (in one patient to 107° F.), rapid pulse, and general weakness and discomfort. In non-febrile patients only slight general reaction may occur with a rise of one or two degrees of temperature, slight general muscular aching and debility. But slight local reaction at point of injection occurs. In six of the hospital patients there was a uniform and relatively rapid decrease in the size of the lymph-nodes—one of these without Röntgen treatment. One patient treated out of the hospital without Röntgenotherapy, with very large lymph-nodes, big spleen and febrile, had a violent general reaction with the third vaccination, then became afebrile, and the swellings of the lymph-nodes and splenomegaly rapidly diminished. After five vaccinations, this patient passed from observation. Reports from physicians on two of the series show favourable progress with gradual diminution of the tumours of the lymph-nodes and improvement in a general way. One of these patients receives Röntgen treatment also; the other, vaccines only. Two of the patients are dead. One with rather rapid enlargement of the mediastinal lymph-nodes died soon after the third vaccination, from the result of mediastinal pressure. This patient was managed at his own home by the family physician, and the final clinical details are unknown. One patient with enlarged mediastinal lymph-nodes suffered for a year with respiratory and cardiac embarrassment. Right pleural effusion required frequent tapping. Under other care he received Röntgenotherapy. A short period before death the micro-organism was isolated from lymph-nodes of the neck and groin and from lymphoid tissue removed from the nasopharynx. The patient died from the result of mediastinal pressure after only one autogenous vaccination. Of patients under continued observation one is apparently well. There are no palpably enlarged lymph-nodes; the much enlarged spleen is no longer palpable; the blood-picture is normal; his weight and strength are normal. One patient who suffered from much enlarged mediastinal lymph-nodes and consequent dyspnoea, anasarca and great debility, was very much improved, with diminution of the size of all involved lymph-nodes, gained in weight and was subjectively comfortable, and has had the vaccines

and Röntgen treatment every week since June. In October a remittent type of fever developed with gradually increasing anæmia of the secondary type, a leucocytosis of about 18,000, with 80 per cent. of polynuclear cells. There was no increase in size of lymph-nodes. On November 24 she returned to the hospital. With rest in bed, with vaccines, Röntgenotherapy, and good food there is again rapid general improvement. The other patients are improving with varying degrees of rapidity.

T. R. WHIPHAM.

An ætiological study of Hodgkin's disease ('*Journ. Amer. Med. Assoc.*' 1913, LXI, p. 1803).—C. H. Bunting and J. L. Yates have already described a diphtheroid organism which was obtained in pure culture from four cases of Hodgkin's disease and was observed in three others. They now publish a preliminary note on inoculation experiments of the organism into a monkey, and while they cannot yet claim to have produced Hodgkin's disease they assert that by repeated injections they have produced progressive enlargement of a single group of lymphatic glands which show histological changes identical with those seen in the lymphatic glands of human beings, where the disease is of the same duration. There was set up in the monkey a chronic lymphadenitis with atypical proliferation of the endothelial cells, a beginning proliferation of the stroma tissue, and a well-marked eosinophilic infiltration; also a periglandular sclerosis. Clinically, the animal's blood showed an absence of polymorphonuclear leucocytosis after injection of the organism. An increasing percentage of mononuclear elements was found, particularly of the transitionals, an increase in eosinophils following a primary fall, and an early increase in basophils, all of which are characteristic of the early stages in Hodgkin's disease. The blood-plates were also numerous and large forms were present. To the organism the writers have given the name *Corynebacterium Hodgkini*.

T. R. WHIPHAM.

An ætiological study of Hodgkin's disease ('*Journ. Amer. Med. Assoc.*' 1914, LXII, p. 516).—C. H. Bunting and J. L. Yates, in a second note, record further experiments in which the diphtheroid organism which they cultivated from cases of Hodgkin's disease were injected into monkeys. These experiments show that the diphtheroid organism is pathogenic for the monkey, that it produces a progressive enlargement of the lymph-nodes, with lesions similar to those of Hodgkin's disease in man, and further that the blood-changes in the monkey are similar to those in man. The writers thus feel assured of the ætiologic relationship of the diphtheroid organism (*Bacterium Hodgkini*) to Hodgkin's disease.

T. R. WHIPHAM.

The blood in measles ('*Gazz. d. Osp.*' 1913, xxxiv, p. 1432).—E. Mensi, from observations on seventeen cases, came to the following conclusions: (1) From two to six days before the eruption leucopenia is the rule and the eosinophiles are scarce. (2) During the eruption leucopenia and eosinopenia are almost constant. (3) After the eruption in three cases there was still a discrete leucopenia and in two an absence of eosinophiles. Hyperleucocytosis appears when an infective complication such as stomatitis or broncho-pneumonia occurs.

J. D. ROLLESTON.

Value of the blood-picture in the early diagnosis of measles, especially in relation to the question of isolation ('*Am. Journ. Dis. Child.*' 1914, VII, p. 149).—W. P. Lucas, from the examination of nine

cases of measles and ten controls, comes to the following conclusions: (1) There is an early change in the blood-picture, which may be taken as the first evidence of the disease, viz. a change from the lymphocytic predominance characteristic of infants to a relative increase in the neutrophils. This change usually occurs about a week before any visible sign of infection. There is also a definite leucopenia, which sometimes appears eight days before any clinical signs, and sometimes appears simultaneously with them. The leucopenia is therefore not so reliable as the cell-picture. (2) There appears an ever-increasing number of disintegrated cells about the time when the cell-picture begins to change. In many cases there are large and swollen cells with breaking of protoplasm and nucleus. Lucas maintains that these findings are of value in the early detection and therefore isolation of cases suspected of measles.

J. D. ROLLESTON.

Recent researches on the presence of Leishman's parasite in the peripheral blood (*'La Pediatria,'* 1914, xxii, p. 27).—S. Cannata examined the blood obtained from pricking the finger in eight cases of children suffering from Leishmaniosis, and in seven of them he found the parasite in large mononuclear or neutrophile polynuclear leucocytes. He used Burroughs & Wellcome's stain. Details of the cases are given and micro-photographs of the preparations. In the only case where there was a negative result only one examination of the blood could be obtained; often subsequent examinations yield a positive result after the first has been negative. Some of the parasites preserved their shape, others were altered. The author wished to ascertain whether there was any connection between the time of day, the temperature of the patient, and the presence of the parasite in the circulation, but had to limit his observations to the time the children were brought to the clinic, usually between 10 and 11.30 a.m. Only in one case was there apyrexia, all the others had more or less fever.

VINCENT DICKINSON.

On the presence of Leishman's parasite in the peripheral blood of children suffering from kala-azar (*'Policlínica,'* 1914, ii, p. 324).—J. A. Jordán records a case of a girl, aged 5 years, in whom examination of the peripheral blood, as recommended by Cannata, showed the existence of Leishman's parasite. Hitherto it had been supposed that the diagnosis of kala-azar could only be made by puncture of the spleen—a method frequently objected to by the parents. Kala-azar is as frequent in Spain as in Italy, though Spanish physicians do not appear to be familiar with it.

J. D. ROLLESTON.

Report of 110 cases of infantile Leishmaniosis (*'La Pediatria,'* 1914, xxii, p. 81).—R. Jemma observed these cases in the children's clinic at Palermo. More cases came from the suburbs rather than from the city itself. The age was from seven months to six years, the majority (sixty) occurring between the ages of one and two years. The sex incidence was unimportant. The largest number occurred in June and July. The majority (ninety) belonged to the poorer classes. The pathological anatomy presented considerable variety, and is described under three groups. The duration was variable, and three forms were distinguishable: (a) Acute, lasting thirty-five to forty days; (b) subacute, from three months to one year; and (c) chronic, from one to three years or more. A diminution in the number of blood-platelets was noticed, and the discovery by Cannata of the parasite in the

peripheral circulation was confirmed. Deviation of the complement, wholly or partially, was found in thirteen out of eighty-eight cases, *i. e.* 16 per cent. No advance is reported in the treatment of the disease, which, according to the author, is enormously on the increase in Italy.

VINCENT DICKINSON.

Serological researches in Leishmaniosis (*'La Pediatria,'* 1913, xxi, p. 801).—**G. di Cristina** and **G. Caronia** have made extensive researches on this subject. With regard to the statement that the dog is spontaneously affected with a disease that can be identified clinically and ætiologically with infantile Leishmaniosis they made this experiment: They made an alcoholic extract of 200 fleas from an infected dog. This extract was used as antigen in investigating complement deviation with the blood-serum of children immunised with cultures of canine and human *Leishmania*, who already showed marked complement deviation with the respective specific antigens. In all their experiments the result was invariably negative. As regards the pathogenesis of this affection the authors assert that *Leishman's* parasite behaves like other infective germs, inasmuch as it acts on the organism with special toxins and endotoxins, inducing the formation of anti-bodies. The complementary power of the blood was always increased in the advanced stages of the affection. They used as a therapeutic measure a nucleoproteid extracted from cultures of the parasite, but the effects were inconclusive, although such treatment seemed, on the whole, beneficial.

VINCENT DICKINSON.

Infantile kala-azar (*'Le Nourisson,'* 1914, II, p. 10).—**L. Lagane** points out that under the name Leishmaniosis are included Indian kala-azar, Mediterranean or infantile kala-azar, and cutaneous lesions such as oriental boil, but the first two are probably identical, and are caused by the *Leishman-Donovan* bodies. At one time they were thought to be distinct, the Mediterranean form being capable of inoculation into dogs and monkeys. Kala-azar is the first protozoal infection in man in which the parasite has been cultivated in an artificial medium. The organism is obtained by puncture of the spleen or bone-marrow, and is a round or oval body two to four μ in diameter. It consists of a clear protoplasm and two chromatophil bodies—the nucleus and the centrosome—the latter of which is characteristic, and on cultivation it appears flagellated, but does not show an undulating membrane. Infantile Leishmaniosis is little known outside the Mediterranean basin. It occurs in children chiefly during the first three years of life, and is possibly contracted from dogs through the medium of the flea, though possibly the mosquito or bug may be the infecting agent. The disease is characterised by irregular fever, which is uninfluenced by quinine and is accompanied by digestive troubles, marked anæmia, and great hypertrophy of the spleen. The liver is also hypertrophied and the lymphatic glands may be enlarged. Wasting is extreme, and œdema and hæmorrhages occur. The prognosis is extremely bad, as few cases recover. The pathological changes consist of an atrophy of the Malpighian bodies and a general fibrosis of the spleen, and a fatty degeneration accompanied by fibrosis in the liver. Treatment is unsatisfactory. Numerous remedies have been tried, such as quinine, atoxyl, salvarsan, hectine, cacodylate, etc., but none appear to be specific. Vaccine therapy also has proved ineffectual hitherto.

T. R. WHIPHAM.

Malaria in infants (*'Arch. of Ped.,'* 1914, xxxi, p. 244).—**W. Weston.**

—Wherever malaria is endemic, the birth-rate is low and infantile mortality is high. In the Southern States malaria reaches its height in July, August, and September, while along the South Atlantic Sea-border and the Gulf Coast it often prevails throughout the year. The pernicious type is most often seen in the early autumn. In the South the tertian variety is the most frequent and the quartan the least. The incubation period is not over three to five days and may be less. The attack usually begins suddenly with vomiting or convulsions. The temperature rises rapidly to 105° F. or over. Herpes labialis often appears in a few hours. The spleen rapidly enlarges and the liver is usually enlarged. The skin is more or less jaundiced. The tongue is coated, and there are anorexia and vomiting. Constipation or diarrhoea may follow an attack. Many diseases in children may be mistaken for malaria, especially pyelitis, septicæmia, pyæmia, broncho-pneumonia and acute indigestion. The mortality rate is high, especially in the æstivo-autumnal form. Owing to gastric irritability, in mild attacks no quinine should be given for at least three hours after the temperature has become normal, then 2 grms. of the bisulphate should be given in aqueous solution every two hours for twenty-four hours. Then every four hours for twenty-four hours, and finally, 3 grms. morning and evening for three weeks. In pernicious malaria quinine must be given intravascularly or by rectal injection.

J. D. ROLLESTON.

Congenital malaria (*'Arch. of Ped.,'* 1914, xxxi, p. 251).—M. H. Bass refers to the papers of Meara (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1910, vii, p. 180) and Beekel (*ibid.*, 1912, ix, p. 39), and others, and records the following personal case: A female infant, born in New York City, of a mother who had had untreated tertian malaria for four weeks during her fifth month of pregnancy, was taken ill at the age of four weeks. The symptoms were pallor, irritability, green stools and loss of weight. The extreme anæmia and enlarged spleen led to a blood examination with the finding of tertian malarial plasmodium. Rapid recovery took place under quinine and iron.

J. D. ROLLESTON.

The normal blood-pressure in children (*'Monatsschr. f. Kinderheilk.,'* 1914, xii, p. 20).—E. Nirrnheim examined an equal number of boys and girls between the ages of six and fourteen years, and found a constant increase in the blood-pressure with the development of the individual. His observations thus confirm those of Wolfensohn-Kriss, Kaupe, and Salle (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, viii, p. 469).

J. D. ROLLESTON.

Permanent microsphymia with mental debility (*'La Clin. Infant.,'* 1914, xii, p. 52).—G. Variot reports a case in a woman, aged 37 years, previously published cases referring exclusively to children. The pulse was hardly perceptible, although the heart-beats were regular and strong. The radial arteries were more resistant than normal. Extremities cold and livid. Temperature in axilla, 36·5° C. The pulse and temperature were unaffected by administration of thyroid extract. The blood-pressure was normal. The patient's height was 1·50 m., and intelligence below normal. She was married and had a child of normal intelligence and who presented no microsphymia.

VINCENT DICKINSON.

The collateral thoracic circulation in the diagnosis of tracheo-bronchial adenopathy (*'La Pediatria,'* 1914, xxii, p. 401).—S. Maggiore

found that in all cases where there was pre-thoracic collateral circulation, radioscopy showed the presence of adenopathy. Usually, the more marked the venous circle the larger were the glands. The site of the venous enlargement was limited in the majority of cases to the second intercostal space between the sternal border to the clavicular, in some cases to the first space, very exceptionally to the third. Out of 131 cases the venous circle was noticed 78 times on the right side only, 40 times on the left; in 21, it was generalised.

VINCENT DICKINSON.

Enlargements of the heart and disturbance of its rhythm in children (*Journ. de Méd. de Paris*, 1913, xxxiii, p. 915).—**P. Nobécourt**.—Dilatation and hypertrophy of the heart occur in diseases of that organ or of the kidneys, lungs, pleura and mediastinum, and in deformities of the chest-walls. One also frequently finds in children increased cardiac dulness, with normal heart-sounds and extra-cardiac bruits. Sometimes these signs are associated with tachy- or bradycardia, arrhythmia, etc.; and the child may complain of palpitation and cold, and have blue extremities. If there has been a preceding typhoid or scarlet fever, pneumonia, acute rheumatism or chorea, these signs may be due to myocarditis, or commencing endo- or pericarditis. Rapid growth itself is not responsible, but if associated with causes of cardiac enfeeblement it may help. Such causes are adenoid vegetations causing some respiratory obstruction, dyspepsia with gastric dilatation, intermittent albuminuria, anæmia, etc., especially if associated with undue physical strain, such as cycling, gymnastic exercises, running, rowing, and the like. Arrhythmias in children are very common and are often physiological. Tachycardia may be emotional or occur in convalescence from acute specific diseases; with it the blood-pressure is generally low. This orthostatic tachycardia is not a sign of disease and is generally improved by moderate exercises. It is often associated with respiratory arrhythmia. Extra systoles may be due to increase of cardiac excitability, to toxic causes, to circulatory defects, and to heart disease. The toxic causes are tea, coffee and tobacco, or digitalis, belladonna or salicylates. Hypertension may cause extra-systoles, and they are also found in organic heart disease of the muscle, valves or pericardium. Bradycardia may be due to some abnormal excitation of the vagus nucleus or its trunk. It may therefore occur in meningitis, tumours of brain or mediastinum, etc., or in convalescence from acute illness. Occasionally there is auriculo-ventricular disassociation with complete heart block. This may be due to acute specifics such as diphtheria. It is recognised by tracings from the jugular and apex.

J. PORTER PARKINSON.

Case of acute rheumatic carditis and auricular fibrillation in a child (*Heart*, 1913, v, p. 15).—**G. A. Sutherland** and **Carey Coombs** record a case of rheumatic carditis of such virulence as to prove fatal within six days in a child aged 5 years. Histologically the myocardial changes were of the rheumatic type, but resembled those of experimental rheumatism in their acuteness and virulence. An additional point of interest lay in the fact that auricular fibrillation developed before death. The myocardial changes in the auricular walls were found to be of unusual severity.

REGINALD MILLER.

Signs of diagnosis of cardio-pericardial symphysis. (*Gaz. des Hôp.*, 1914, lxxxvi, p. 147).—**E. Delorme**.—The past history is of great im-

portance with reference to severe rheumatism or tuberculosis, other causes are less common and more easily discovered. Many signs, such as hypertrophy, or dilatation, or disease of the valves of the heart are frequent, but may be unaccompanied by pericardial adhesion. Fixity of the apex of the heart was once considered almost pathognomonic, and in conjunction with other signs it is of great value. Other valuable signs are: disappearance of the impulse of the heart's apex, undulatory movement of the pericardium (Jaccoud), systolic recession of the impulse and the epigastrium, systolic recession of the intercostal spaces, recession of epigastrium, increase and invariability of cardiac dullness or percussion, fixity of the apex of the heart, invariability of the cardiac shadow on X-rays examination, diminution of diaphragmatic movements, systolic recession of the intercostal spaces posteriorly (Broadbent), inspiratory recession of the lower part of the sternum and chest (Wenckebach). This pericardial adhesion may be complicated by general or local adhesions, anteriorly, posteriorly, inferiorly, etc.

J. PORTER PARKINSON.

The clinical symptoms and morphology of congenital tricuspid stenosis (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 320).—**E. Wieland** describes the history and post-mortem examination of a female child, aged 4 months, diagnosed during life as suffering from septum defect. The autopsy revealed a triangular defect immediately beneath the right aortic valve, and complete absence of the tricuspid opening and valve. The author draws attention to the intermittent character of the basic systolic murmur and the peculiar form of septum defect.

F. R. B. ATKINSON.

Acute nephritis in an infant with congenital heart disease (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1020).—**H. M. McClanahan** reports the case of a "blue" infant, aged 1 year, who was attacked by scarlet fever, and on the fifth day began to show œdema about the face. The swelling increased and ascites developed. The urine was of low specific gravity, and contained albumin, red and white blood-cells, and hyaline and granular casts. A systolic murmur was audible all over the cardiac area, and the red blood-cells numbered 9,800,000. The case terminated fatally, and at the necropsy the heart was found to be of adult size, with a large patent foramen ovale and a deficiency in both auriculo-ventricular valves. The kidneys showed marked interstitial nephritis with chronic passive congestion. The epithelium was degenerated and the capsule thickened. There was also a general round-cell infiltration. The other organs all showed signs of passive congestion.

T. R. WHIPHAM.

Surgery.

Splenectomy for Gaucher's disease (*Arch. of Ped.*, 1914, XXXI, p. 340).—**C. Herrman, H. Roth and E. P. Bernstein** record the ninth operative case and sixth recovery from splenectomy in Gaucher's disease. The patient, a boy, aged 13 years, had been known to have an enlarged spleen since the age of 4 years. One sister also had an enlarged spleen, these two being the two last of a family of eight children. He had the characteristic yellowish thickenings of the conjunctivæ, splenomegaly, moderate hepatomegaly, epistaxis, moderate anæmia with a low colour index, leucopenia, and a progressive fall in the percentage of the polymorphonuclear leucocytes. The Wassermann and von Pirquet tests were

negative. The spleen, which weighed nearly 3 lb., showed the characteristic large-celled hyperplasia. Cultures, both aerobic and anaerobic, were negative. Of fifteen authentic cases of Gaucher's disease, three only were in males. Reference is made to a case of Gaucher's disease in a child of 17 months reported by **Niemann** (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 1), in which the Wassermann reaction was positive, although anti-syphilitic treatment had no effect and the necropsy showed an entire absence of specific lesions.

H. D. ROLLESTON.

Splenectomy in Gaucher's disease (*Am. Journ. Med. Sc.*, 1914, CXLVIII, p. 213).—**J. F. Erdmann** and **J. J. Moorhead** admit, as established by operation or necropsy, sixteen cases of Gaucher's large-celled hyperplasia of the spleen. In ten of these sixteen cases splenectomy has been performed, with post-operative death in two and recovery in eight. The youngest patient was the authors' case, aged $3\frac{1}{4}$ years, and was well sixteen months after splenectomy. The oldest patients (two) were aged 37 years. Nine of the patients were females and one a male. In five of the ten cases the disease was present in other members of the family. The main reasons for splenectomy are that all other forms of treatment, including X-ray exposures, have failed, and that, even in advanced cases, it relieves symptoms. Early operation is advocated as likely to yield a low operative mortality. The authors' patient weighed $26\frac{1}{4}$ pounds, and the spleen 15 ounces. In addition to the characteristic cells of Gaucher's disease there were miliary tubercles in the spleen. The liver was enlarged before operation, and was somewhat increased in size some months after operation. **Babes** (*Compt. rend. Soc. Biol.*, 1913, LXXV, p. 575) describes a case of successful splenectomy for Gaucher's disease, which is not included by Erdmann and Moorhead. The patient was a male, aged 22 years, and the spleen weighed 43 ounces. The large cells, $20-40\ \mu$, showed eosinophile protoplasm, and there were numerous eosinophile leucocytes in the spleen. Babes suggests that the large size of the Gaucher cells is due to the presence of lipoids, which, being produced by metabolic aberrations in the spleen, liver, and bones, are absorbed by the cells. As bearing on the formation of lipoids by disturbances of metabolism he refers to a case of diabetes with large-celled hyperplasia of the spleen, reported by Schulze-Braunschweig.

H. D. ROLLESTON.

Splenectomy for Banti's disease (*Boston Med. and Surg. Journ.*, 1914, CLXX, p. 832).—**M. G. Sturgis** records the case of a boy, aged 18 years, who had local suppuration after amputation of the arm for a gunshot wound. Within a year of this his spleen was found to be enlarged and subsequently gastro-intestinal hæmorrhage and signs of ascites appeared. Just before operation the liver was noted to be enlarged, and the blood showed erythrocytes 4,000,000, leucocytes 8000, polymorphonuclears 65 per cent., small mononuclears 25, large mononuclears 5, eosinophiles 3, and transitionals 2. The operation revealed free fluid in the abdomen and perisplenic adhesions. The spleen weighed 800 grms., and histologically was described as a "chronic toxic spleen." For four days after the splenectomy there was gastro-intestinal hæmorrhage. Fourteen months later he was well, but the leucocyte count was abnormal: lymphocytes 43 per cent., large mononuclears and transitionals 15, polymorphonuclears 34, eosinophiles 8 per cent. Total leucocyte count 8000.

H. D. ROLLESTON.

Acholic jaundice; splenectomy (*St. Bart.'s Hosp. Rep.*, 1913, XLIX, p. 51).—**H. Thursfield**.—This disease shows itself by the presence of chronic jaundice, frequently seen at or soon after birth, and in bile pigments in the stools, but not in the urine; it occurs frequently in several members of one family. The best treatment is splenectomy. The mortality in such selected cases should not be more than 2–3 per cent. Fragility of the red corpuscles to solutions of saline is pathognomonic of the congenital condition. The author mentions a case of his own in a boy, aged 9 years, treated successfully by splenectomy, and others in the literature.

F. R. B. ATKINSON.

Ankylosis of the mandible (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 1014).—**R. C. Creasy** reports the case of a boy, aged 13½ years, undersized and under-weight, who had a limited motion of the mandible permitting of but ¼ in. separation of the incisors and no lateral motion. At the age of 4 years and 2 months, while swinging, he fell 8 ft. and struck his chin on the hard, wood floor. As the child suffered intense pain and was unable to move the mandible, a physician was summoned. Palliative treatment was instituted, and the child fed through a tube for a period of two months. No attempt was made to use the mandible, and it ankylosed in the position in which it was found. Röntgenoscopy disclosed the condition to be a previous fracture of the ramus, the line of fracture running into the joint, and a mass of callous substance filling the joint. Ether was administered, and the limit of motion was still the same, thus eliminating the spasmodic condition of the muscles as being one of the causal factors for the limited motion. Under force with the use of two oral mouth-gags, the degree of force applied being the same, thus avoiding any lateral dislocations, an increase of the limited motion to 1½ in. was obtained; this treatment was carried out three successive times at intervals of one week. During the time intervening the boy was permitted to make good use of the oral screw. The results obtained by this procedure were excellent.

T. R. WHIPHAM.

Necrosis of the mandible (*Brit. Dent. Journ.*, 1914, xxxv, p. 297).—**O. R. Ennion**.—A girl, aged 11 years, had an attack of scarlet fever. Convalescence was delayed for several months owing to the septic condition of the throat. The teeth in the lower jaw loosened, and there was considerable constitutional disturbance. Under an anæsthetic the periosteum was stripped off the necrosed body of the mandible, and the buccal cavity drained by an incision behind the angle of the jaw. For the next six months the child was fed on milk. The inferior dental nerves were both destroyed, and all sensation lost on the lower side of the face. Sequestra became pushed up from below by the rapid formation of new bone, and rendered nourishment difficult. The whole mandible was therefore removed, except the left condyle, and the child grew a new jaw with very good movement. Return of sensation was complete.

J. D. ROLLESTON.

A case of congenital malformation of the forearm with a short consideration of the ætiology (*Med. Chron.*, 1914, xxvii, p. 11).—**J. P. Buckley** describes a case of a boy, aged 12 years, in whom the right upper arm was normal up to the elbow, but the forearm was represented by a stump, three inches long, at the end of which were five rudimentary digits. He looks on the condition as one of intra-uterine amputation.

F. R. B. ATKINSON.

Two instances of congenital abnormality (*'Austral. Med. Gaz.,'* 1914, xxxv, p. 313).—**E. Cuthbert Hall**.—(1) At birth a male child was found to be minus a radius in both arms. The hand was parallel to the humerus. (2) A child was born with six toes, a condition which had existed in thirteen instances altogether in the family for the last 150 years.

F. R. B. ATKINSON.

Total congenital absence of the femur (Phocomelie) (*'Cleveland Med. Journ.,'* 1913, xii, p. 321).—**J. J. Thomas** reports this rare abnormality in a syphilitic baby, born by the breech to a syphilitic, but otherwise healthy, woman. The bones distal to the knee-joint were normal. Bilroth was the first to describe this defect. Klaussner, in 1900, could only find twelve cases on record.

CHRISTOPHER ROLLESTON.

Congenital absence of the femur (*'Journ. de Méd. de Bordeaux,'* 1914, lxxxv, p. 252).—**Codet-Boisse**.—A female child, aged 5 months, normal in other respects, had congenital absence of the right femur and dislocation of the left. The right thigh was non-existent, and the foot barely reached to the level of the heel on the normal side. The X-rays showed a rudimentary right femur, considerably reduced in volume and length— $3\frac{1}{2}$ cm. as compared with the normal limb, which was 13 cm. The probable cause of the malformation was intra-uterine compression. No treatment was possible. In the subsequent discussion **Petit de la Villéon** alluded to his case of congenital absence of both femora (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, viii, p. 472), and insisted on the fact that the arrest of development only affected the skeleton and not the muscles of the buttock or thigh.

J. D. ROLLESTON.

Lumbo-sacral spina bifida. Congenital articular stiffness of both knees in extension. Double equino-varus; malformation of the anus (*'Journ. de méd. de Bordeaux,'* 1914, lxxxv, p. 158).—**H. L. Rocher** and **J. Souchet** describe this case of a child, aged 3 months. They did not think operation of any kind advisable, and consider that the articular stiffness will probably diminish under massage and mobilisation.

F. R. B. ATKINSON.

Schlatter's disease (*'Practitioner,'* 1914, xcii, p. 591).—**C. Corben** describes a case of a boy, aged 7-8 years, who caught his heel going down stairs, with the result that the tubercle of the left tibia was partly avulsed. The treatment consisted in strapping with Scott's dressing and firmly bandaging the knee. In $2\frac{1}{2}$ months the treatment was discontinued. He discusses the literature of the subject.

F. R. B. ATKINSON.

Congenital absence of the fibula (*'Semana Med.,'* 1914, xxi, p. 2).—**Rivarola** describes nine cases of this deformity with some photographs and skiagrams. In many of the cases there were other defects, viz. absence of the two outer metatarsal bones and phalanges. The operation carried out in selected cases is described.

M. D. EDER.

A case of bone cyst of the os calcis (*'Boston Med. and Surg. Journ.,'* 1914, clxx, p. 611).—**W. P. Coues** examined by the X-rays the left os calcis of a boy, aged 14 years, and found a cyst of the whole of the central portion of the body of the bone. No operation was advised.

F. R. B. ATKINSON.

Isolated disease of the scaphoid (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 1155).—**F. J. Fassett** states that only eight cases of isolated disease of the scaphoid bone of the foot in children or Köhler's disease, have been described since 1908. He here records two cases from his own practice. The first was a girl, aged $2\frac{1}{2}$ years, seen August 7, 1911; began walking at 16 months; she was sick for a month in August, 1910, with fever and swollen glands; a month before examination she slipped while the foot was caught between the bed and the wall; she limped that day and could not walk the next nor at any time since. Examination proved negative except for the right foot, which was swollen; there was no tenderness on the tibia or fibula, phalanges, or metatarsus; there was moderate tenderness over the tarsus, especially on the inner side; the foot was held by muscle spasm in moderate equinovagus. In both lateral and antero-posterior views, röntgenograms revealed a dense pearly shadow of the scaphoid with moderate atrophy of the surrounding bones of the tarsus. Röntgenoscopy was otherwise negative. Plaster-of-Paris was applied to the foot and lower leg and occasionally renewed. During the first month the symptoms all increased; during the second month the child walked with comfort in the plaster and a röntgenogram taken two months after the first showed less atrophy of the surrounding bones. The appearance of the scaphoid was unchanged except that at the centre there was a distinct "punched-out" look. Plasters were continued for two months more and a Whitman plate was worn for a few weeks after the plaster was removed. All symptoms at this time had disappeared, and there has been no relapse in the past two years of walking without support. Case 2, a girl aged 4 years, seen October 27, 1913, for several weeks had had moderate tenderness in one foot, which was slightly swollen and warm. The röntgenogram showed moderate retardation of growth and increase in density of the scaphoid in this foot. Examination and history otherwise negative. The child was treated in much the same manner as was case 1. The foot was supported for a little over two months. All symptoms disappeared. Pfahler states that all authors agree that the condition is not tubercular. The fact that a distinct sclerosis indicated by the increased density of the ossifying centre is present, points to an inflammatory process. It would seem, therefore, that the disease is an osteitis, probably of traumatic origin, which interferes with the development of the bone. The author, however, has not entirely given up the view that the lesion may be tubercular in origin.

T. R. WHIPHAM.

The vesalianum mistaken for a fracture of fifth metatarsal by inversion of foot (*Boston Med. and Surg. Journ.*, 1914, CLXX, p. 725).—**W. P. Coues**.—The vesalianum is the proximal and external part of the tubercle of the fifth metatarsal and is extremely rare. A girl, aged 12 years, slipped and fell, her left ankle turning under her. Considerable pain and lameness resulted. X-rays showed what was apparently a fracture of the base of the fifth metatarsal, but after four weeks' immobilisation in plaster the skiagram showed the same condition as before. A skiagram was then taken of the other ankle, and the same shell-like bone was seen united to the metatarsal by cartilage. The left foot was now no longer tender, and its function was completely restored. Coues recommends that a skiagram should be taken of each fifth metatarsal bone whenever diagnosis has been made of fracture of the base of the fifth metatarsal.

J. D. ROLLESTON.

Dorsal dislocation of proximal phalanx of great toe (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 1086).—**D. W. Deal** records the case of a boy, aged 14 years, who had a painful and swollen foot due to a horse falling on it. Examination showed marked deformity of the right foot, and suspected fracture with dislocation. A röntgenogram disclosed a dorsal dislocation of the proximal phalanx of the great toe, with a plantar displacement of the metatarsal, and a fracture of the distal end of the second metatarsal bone. Though Malgaigne calls attention to the fact that four out of ten cases of this type are irreducible, reduction under general anaesthesia was readily accomplished and the end-results are perfect. The condition is rare, the total of recorded cases being only twenty.

T. R. WHIPHAM.

Review.

CARDIOPATHIES DE L'ENFANCE. By Dr. P. NOBÉCOURT, Professeur agrégé à la Faculté de Médecine, Médecin des Hôpitaux de Paris. Paris Librarie: O. Berthier. Price 6 francs.

IT was with pleasure that we opened this little book to read it, and our anticipations were not disappointed. In a series of clinical lectures the author has given us a review of the principal types of cardiac disease as it is seen in children. It is written with that Gallic verve after which the Briton toils heavily, but in vain. There is a lucid chapter on congenital abnormalities, a subject which is very difficult to deal with systematically. It is materially improved by some simple illustrations of the blackboard type. We were a little surprised to find no mention of the value of skiagraphy in the diagnosis of patency of the ductus arteriosus. The remainder of the book is mainly occupied with a consideration of the various phases of rheumatic carditis and its sequelæ. The author has gone a long way towards acceptance of many of the principles on which the modern British view of this disease is founded. He is always insisting on the paramount importance of the myocardium, and on the frequency and seriousness of the direct injuries to the cardiac muscle inflicted by rheumatic infection of the heart. He evidently looks upon carditis, polyarthritis, and chorea as three different manifestations of the same pathological process, and he lays due stress on the insidious and relapsing character of the infection. His attitude towards the diagnosis of pericardial effusion and adhesion in cardiac rheumatism is a careful one, much more respectful to post-mortem facts than most clinicians are in treating of these matters. There are also admirable paragraphs on the tuberculous and syphilitic forms of mediastino-pericarditis. He is a little too brief, perhaps, in his summary dismissal of the graver forms of arrhythmia, but he makes it clear that in a child an irregular pulse is but rarely due to cardiac disease. The book is full of diagrams of cardiac dulness, but there is little or no acknowledgment of the pioneer work of Dr. D. B. Lees in this connection.

Those interested in the cardiac diseases of children should not miss Dr. Nobécourt's clinical lectures, which contain many new and illuminating views of the subject. The chapters on treatment are particularly to be commended, both for sanity and attention to detail, and throughout the book there is abundant evidence to show that the author is dealing with matters from the standpoint of his own personal experience—the only satisfactory basis for a treatise on any branch of medicine.

C. C.

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STATUS LYMPHATICUS.*

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IN 1905 the Society for the Study of Disease in Children devoted a sitting to the discussion of the causes of sudden death in children (10), and among other phenomena gave consideration to the subject of our discussion this afternoon. In the intervening nine years the literature upon status lymphaticus has grown to alarming proportions, and every year adds an increasing number of communications. But in spite of this fact I am afraid that our absolute knowledge of the condition remains almost as small as then, though I think that the limits of our knowledge are better defined and that there is less tendency to stray into somewhat vague speculation.

I must first recall to your recollection the facts which led up to the formulation of the conception of a constitutional disorder called "status lymphaticus." Away back in the seventeenth and eighteenth centuries our predecessors had recognised that there occurred deaths which could be attributed to the pressure of a large thymus gland

* The opening address in a discussion at the Provincial Meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine at Bournemouth on June the 6th, 1914.

upon the vital structures contained in the upper aperture of the thorax. It is probable that the earliest recorded cases were examples of malignant disease of the gland, but in the nineteenth century it was recognised that there was a group of cases of dyspnoea terminating with sudden and unexpected death in which the only anatomical morbid lesion was the presence of an abnormally large thymus. In 1850 Friedleben, after a detailed research into the anatomy of the gland, came to the conclusion that there was no such thing as thymic asthma. That this dogma, like most dogmatic statements on controverted questions, was exaggerated, is, I think, now quite clear; but it cleared the ground for the conception formulated by Paltauf in 1889 of a constitutional disorder manifested by a hypertrophy of all the lymphatic structures of the body including the thymus gland: a condition to which he gave the name of "status lymphaticus." The features upon which he laid stress were the enlargement of the thymus gland, the hypertrophy of the tonsils and the lymphatic tissues of the naso-pharynx, the enlargement of the lymphoid tissue at the root of the tongue, the hypertrophy of the Peyer's patches and solitary follicles of the intestine, the large spleen; and to these he added the hypoplasia of the aorta, a feature which has been seldom observed since. Such abnormalities he held to be the outward expression of a constitutional disease which rendered its possessors peculiarly liable to infection and to sudden failure of the vital functions.

Paltauf's hypothesis has had vigorous critics and valorous supporters; both, if I may venture my own opinion, indiscriminating and indiscreet. But we are to-day in a better position than in the discussion of 1905 as regards the knowledge of the normal anatomy of the thymus gland. Then it was commonly stated that the gland reached its maximum size in the last months of foetal life and during the first two years of infancy; and that after this date it rapidly atrophied. Even now, however, it remains a disputed point what is a normal weight for the gland at any given period. In a paper which I wrote (11) in 1902 I gave reasons for believing that the normal weight during the period of infancy had been considerably exaggerated, and Dudgeon (2) in 1905 came independently to the same conclusion. We considered that any thymus gland which exceeded 10 to 12 grm. during the first two years of life must be considered abnormal. I must, however, add that some of the German authorities put the normal weight much higher, at 25 grm., and that one of the more recent text-books of anatomy in this country states that the gland at puberty may be merely remains or may weigh as

much as 40 grm. Morbid anatomical experience, however, at least in this country, does not agree with these statements, and it is exceptional to find a thymus gland of more than 10 grm. except in connection with the condition I am about to mention.

Friedleben in 1850 maintained: "Es gibt kein Asthma thymicum." It now, however, seems to be generally agreed that he made a mistake, and that there are cases of dyspnoea which are directly attributable to the pressure of the enlarged thymus. For example, Klose (6), writing in 1911, was able to bring forward nineteen cases in which the excision of the whole or a part of the thymus had relieved the dyspnoea; in another case the dyspnoea persisted, and in three others the operation was fatal. He came to the conclusion that the cause of such dyspnoea was pressure by the enlarged gland and that all such cases "belong to the surgeon." The American, Parker (8), writing in 1913, collected fifty cases in which operation had been performed for the relief of dyspnoea. The mortality of the operation was considerable (seventeen deaths, 33·3 per cent.), but the deaths were seldom to be attributed to the operation. It should, however, be noted that in thirteen of these seventeen cases there was infection either of the wound or of the lungs. Even if we take only the cases recorded since the beginning of 1910, nine out of twenty-three patients were dead within a month of the operation while of the recoveries one required a second operation six months after the first; the relief from the dyspnoea was generally gradual and not immediate, though in about half the cases the acute attacks of suffocation disappeared at once. My own experience is that these cases of so-called thymic dyspnoea are extremely rare. I have been on the look-out for such cases for many years, and I have asked many friends of greater experience than mine, but with one exception I have yet to meet with symptoms at all suggesting the condition. This case was that of a baby, aged 5 months, who had a history of making gurgling noises since birth and of becoming very blue when he cried. He had some inspiratory and expiratory stridor and some dilatation of the veins of the neck and cyanosis when he cried, but no recession of the chest walls and no bulging tumour in the episternal notch. On examination he had an area of impaired resonance over the manubrium sterni, and for a distance of about $\frac{1}{2}$ in. on either side the dullness was continuous with the heart dullness. An X-ray picture showed an opaque shadow coincident with the dull area, such as might be caused by a bulky thymus gland. Intubation of the larynx did not relieve the stridor. Thymectomy was discussed, but before a decision was made a reddened area appeared above the inner end of the right

clavicle, and an abscess was opened, in connection presumably with the deep lymphatic glands, with complete relief of the dyspnœa. The cavity of the abscess extended backwards to the vertebræ, and the trachea was displaced to the left side.

My own opinion is that in many of these cases of dyspnœa the thymus is not responsible for the pressure, but that, as in this case, the real source is the enlargement of deep glands. And I must add that in the records of the fatal cases following operation there is no statement of the condition of the lymphatic apparatus elsewhere in the body; that is, there is no attempt to establish the diagnosis of lymphatism, while in several of these the tracheo-bronchial glands are described as necrotic.

But, whatever may be our opinion about these dyspnœic cases, there can be no doubt that pressure plays no part in the cases which I am next going to consider, the sudden deaths, whether in infants who have given no previous signs of disease, or in those who are suffering from some trivial disorder, or again, in patients who expire without warning under an anæsthetic. It is a common experience of the post-mortem room to make an examination of the body of a baby who has been found dead without any previous illness, and in the bulk of these the morbid anatomy is constant—an enlarged thymus, usually between 25 and 35 grm., bulky and thick, often covered with small petechial hæmorrhages, a hypertrophy of the Peyer's patches and of the solitary follicles of the intestine, and an enlargement of the mesenteric, bronchial and cervical glands. It has been maintained that such cases also are due to the pressure of the thymus upon the vital structures. The hypothesis takes various shapes, sometimes that the pressure is exercised on the trachea, and that this takes a flattened shape, but it has been shown that an elliptical shape is not uncommon in the normal child. Then, that the pressure is exercised on the great vessels, but there is no sign of engorgement of the organs such as would accompany such pressure, and often the heart is empty and firmly contracted. Lastly, that the pressure acts upon the vagi and inhibits the heart's action. I was some years ago an eye-witness of such a death. A boy, aged 13 months, "suddenly sat up, his eyes became fixed, he ceased to breathe, became very slightly blue, and then quite white, and fell back dead. The whole series of events occupied less than thirty seconds." Such a manner of death does not suggest pressure. Bellamy Gardner's experience (4) with a boy, aged 13 years, who was under chloroform, was very similar. The patient, just after the operation had been begun, "made a slight retching movement . . .

stopped breathing . . . a deep navy-blue coloration appeared on the forehead and temples . . . the lips and ears were at the same time almost normal in colour . . . From the moment of respiratory paralysis not one single natural muscular or respiratory movement took place." In both these cases the autopsy showed the presence of the classical signs of status lymphaticus, and the complete absence of any signs of obstruction to the respiratory passages, and, further, the absence of any signs of pressure upon the great veins of the neck. If pressure be the cause of death, it appears to me that it is inconceivable that the great veins and the sinuses of the brain should show no sign of dilatation and congestion. Before leaving these cases I must add that such "anæsthetic" deaths are, in a very large number of instances, due to the existence of this mysterious condition. Spilsbury (9), who has had an unusually wide experience, has stated that the majority of sudden deaths during anæsthesia which he has had to investigate were associated with the presence of status lymphaticus. Nor do they occur with chloroform alone. Of thirty such cases McCardie (7) found that in seventeen the anæsthetic was chloroform, in six ether alone was used, and in five others a mixture of ether and chloroform. Further, in two cases local anæsthesia had been employed, in one cocaine, in the other Schleich's infiltration method. Nor is the death due to the shock of the operation, for in more than one instance the operation has not been begun. Lastly, in several the patients had been safely anæsthetised, the operation had been completed, and the patient back in bed had recovered consciousness, and then when all seemed safe suddenly death had supervened. Such deaths are quite unlike the so-called "delayed chloroform poisoning," in which condition there is seldom any suddenness in the fatal issue, but profound collapse with vomiting and acetonæmia fill a more or less prolonged interval.

Besides these two well-recognised groups some writers have found evidence of status lymphaticus in sudden death occurring in the course of certain diseases which do not usually lead to a fatal issue. The most striking of these is the sudden death which occasionally occurs in the eczematous conditions of infants. Feer (3) in 1904 was able to collect thirteen cases of death during eczema, and in ten of these there was an enlarged thymus and hypertrophy of the lymphatic structures. He does not contend that all deaths in eczema are associated with this condition, since some are undoubtedly due to an acute infection. It is interesting in this connection to recall that Gardner's patient had suffered from obstinate eczema before his death.

Some authors have also maintained that a status lymphaticus is often found in men who have committed suicide, but this is certainly not a common experience.

Of other diseases in which it is common to find an enlarged thymus I will merely mention myasthenia gravis, a disease which sometimes ends in attacks of dyspnœa and respiratory failure, Addison's disease, and leukæmia. In these two last the enlargement of the gland is by no means common. A more important association is that with Graves's disease. Here it is rare for an autopsy to be performed without finding a considerable enlargement of the thymus. Capelle (1) found that of twenty-two cases of exophthalmic goitre dying under an anæsthetic twenty-one had enlarged thymus glands. Although the other signs of the lymphatic state are often not marked, it is probably to the co-existence of this condition that we must attribute the well-known danger of general anæsthesia in Graves's disease. At the same time I do not think that apart from anæsthesia sudden death is common in this affection.

THE ORIGIN OF THE LYMPHATIC STATE.

When we pass from the consideration of the manifestations of lymphatism to that of the origin of the condition we pass into a region of vague speculation where very little is known, and that little very inaccurately. In recent years Basch, and later Klose (6), have conducted a series of thymectomies on puppies, and though it can hardly be said that these experiments throw much light on the lymphatic state, they do at least widen our conception of the importance of the thymus gland and of its wide connections with the metabolism of the body, especially in the period up to puberty. Basch and Klose have found that when the thymus gland is extirpated in puppies quite early in life the animals grew more slowly than the control animals. Their muscles were more flabby, their bones were softer and more liable to bend and break, their intelligence was less, and after the fourth month they rapidly passed into coma and died. Microscopic examination of the bones showed the characteristic changes of rickets. Klose carried out elaborate examinations of the calcium excretion in these animals and showed that the tissues of the experimental animals were markedly deficient in lime salts. He believes that the thymus is chiefly engaged in hindering the formation of and in neutralising the excess of acids in the organism, and that its enucleation leads to an acid excess in the system. He states that some of the symptoms in the animals remind the observer

forcibly of the manifestations of tetany in young children. These observers and others have found that there is an intimate connection between the thymus and the testes, which tend to enlarge by the growth of the fibrous tissue in them after thymectomy. Miss Hewer (5) has lately obtained somewhat similar results in a series of rats fed upon fresh gland substance; the male rats showed retardation of sexual maturity and often degeneration of the testes. Other experimental work appears to indicate that there is a more or less intimate connection between the thymus and the other glands of internal secretion: the suprarenals, the thyroid, and possibly the pituitary. These deductions, however, rest at present on insufficient grounds.

The net result of these investigations is, I think, to widen our conception of the functions of the thymus, and incidentally of status lymphaticus. This condition is not merely a disorder of the thymus but a much more complicated disorder of the whole "ductless gland" system, and until we obtain a clearer conception of the inter-relations of these glands we shall not progress in our understanding of status lymphaticus.

DIAGNOSIS AND TREATMENT.

Meanwhile it is necessary to recognise the extreme importance of diagnosing the condition, since it so often leads to tragedy. The enlargement of the thymus is the most constant feature, and we must endeavour to discover its existence in all cases of children who are to undergo an operation, especially in those who are the subjects of lymphoid hyperplasia. The most valuable means at our disposal is certainly the discovery of an increased area of dullness over the manubrium sterni. The normal impairment is said to be a V-shaped area scarcely transgressing the margin of the bone, while, in enlargement of the gland this area passes for $\frac{1}{2}$ to $\frac{3}{4}$ in. to either side, and below joins the cardiac dullness. Next to this the X-ray is of some value, but I do not think will distinguish between a thymus and enlarged lymphatic glands in the anterior mediastinum. If with these physical signs there is a tendency to unexplained attacks of dyspnoea or to a persistently low vitality, as evidenced by subnormal temperatures and intolerance of exertion, I think that status lymphaticus should be diagnosed, and the child should not be exposed to an anæsthetic.

Dr. Leonard Williams (12), in the discussion on Gardner's paper, held that the status lymphaticus was, in reality, an expression of

disordered metabolism on the part of the thyroid gland, and that the administration of thyroid extract would avoid many of the accidents met with in the course of anæsthetising children. While I cannot personally feel that there are any good grounds for the indictment of the thyroid in this condition, I yet recognise that it is almost certainly a disorder of the "ductless gland" system, and therefore that it is legitimate to expect something from the employment of an extract which we know has a profound effect upon this system. I should myself be more inclined to use pituitrin, an extract which has the most extraordinary effect in obviating the results of shock; and to "shock" in a broad sense it appears to me that we may attribute the fatal results of the lymphatic state. Wherever I suspected the existence of the condition I should feel inclined to give an injection of this drug before administering an anæsthetic, and I should be glad to hear of the results of such administration on some of the children who are said to be the subjects of thymic asthma.

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THE VACCINE TREATMENT OF SCARLET FEVER.

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IN an interesting paper by R. M. Smith (2) in the 'Boston Medical and Surgical Journal' arguments are quoted in support of the view that scarlet fever is caused by a streptococcus, and an account is given of work done in the prophylaxis of scarlet fever with streptococcic vaccine. The first work of which mention is found was done by Stickler in 1883. He injected himself with the blood of a scarlet fever patient, and in three days had an eruption like scarlet fever,

followed by desquamation. Then he injected the scales from a case of scarlet fever into healthy persons and got no reaction except a local hyperæmia, but if these individuals were subsequently injected with blood from a scarlet fever patient there was no rash nor desquamation.

The largest amount of work on this subject, however, has been done in Russia, where Gabritschewsky reports that encouraging results have been obtained by injecting children with prophylactic doses of streptococcic vaccine. He used a concentrated bouillon culture of streptococci isolated from a person ill with scarlet fever. The organisms were killed by heating to 60°C. and .5 per cent. of carbolic acid added. Each c.c. of the culture contained 0.02 to 0.03 c.c. of sediment; of this, 0.02 c.c. equalled 0.005 gm. dried sediment. Two scales of dosage were employed: either 0.25 c.c. for children under two, 0.5 c.c. for those between two and ten, and 1 c.c. for subjects over ten, or 0.25 c.c. as minimum and 1 c.c. as maximum, an increase of 1 c.c. for each year of life. Three injections were given at intervals of seven to ten days, the dose being successively increased by one one-half or doubled. A reaction usually occurred, which varied in severity, and was generally milder after the second and third injections. As a rule there was some redness and tenderness at the site of injection; at times headache, malaise, and slight pyrexia occurred, and very occasionally a rash and sore throat developed. The records included one death in 50,000 cases, and the method, tested on this extensive scale, is said to have proved strikingly effective in controlling the prevalence of scarlet fever.

In America, Watters (4) treated twenty-one nurses with a polyvalent vaccine of streptococci isolated from the throats of scarlet fever patients. Three doses were given at weekly intervals and were doubled at each successive injection, the initial dose being 50 million. Of these twenty-one nurses, one contracted scarlet fever on exposure, whereas five out of fourteen untreated nurses were attacked.

I am not aware that the prevention of scarlet fever by means of vaccine has attracted much attention in this country as a practical issue. Vaccine, however, has been employed by several clinicians for the prevention and treatment of septic complications during the course of the disease and so far the results on the whole have not been encouraging. Caiger and Cuff (1) mention the use by one of them of a vaccine of scarlatinal streptococci in a few septic cases, but state that the results proved disappointing. Walker (3) treated

fifty cases with a stock vaccine of streptococci obtained from three cases of scarlet fever. Generally the initial dose was five or ten million, and was repeated at intervals of three or four days until the temperature reached the normal level. In mild cases of scarlet fever the vaccine had little effect on the temperature; only the severe and septic varieties of the disease were benefited. Weaver and Boughton (5) treated eighty-eight cases of the disease before the onset of complications with a streptococcic vaccine sterilised by suspension in 25 per cent. galactose solution. The organisms were obtained from purulent lesions occurring in scarlet fever cases, and a dose of 200 million was given. No beneficial effect was observed in these cases, but in about sixteen other cases treated after the onset of complications it was thought that recovery was hastened.

At Plaistow Hospital a hundred cases admitted as scarlet fever during the first four months of 1913 were treated with doses of commercial stock vaccines of streptococci (50 million) and staphylococci (1000 million) repeated in seven days. No reaction whatever occurred in any of the cases. The object of the treatment was to prevent the onset of septic complications during the course of the disease, the first dose being given within two days of admission. Only children under ten years of age were treated, and all were suffering from a moderate or mild attack. As a control these cases are compared with another similar series of a hundred cases which were admitted during the first four months of the present year and did not receive vaccine treatment. The following table shows the average number of weeks each series was in hospital and also the number of cases that suffered from the ordinary complications of scarlet fever. It will be seen that the difference between these two series is very small and might be found between any similar series of hospital cases. From my experience of scarlet fever at Plaistow Hospital I do not consider that the commercial vaccine had any appreciable effect on the cases treated.

	Vaccine cases.	Non-vaccine cases.
Average time in hospital	9 weeks	9½ weeks
Otorrhœa	6 cases	11 cases
Rhinorrhœa	21 „	19 „
Nephritis	0 „	1 case
Second attack	2 „	0 cases
Post-scarlatinal diphtheria	3 „	4 „

Five cases of septic scarlet fever were treated in the acute stage with autogenous streptococcic vaccine, the organisms, in one case,

being cultivated from the nose and, in the others, from the throat. An initial dose of ten million was given and this was doubled at intervals of five days until the temperature dropped to the normal level. All recovered, but three developed otitis. It could not be said that the vaccine had any definite effect in any of the cases.

Autogenous vaccine was also used in the treatment of nasal and ear discharges. In most cases no attempt was made to isolate all the bacteria. The cultures were made on ordinary agar and incubated for twenty-four hours. The organisms were then suspended in normal saline to which .5 per cent. carbolic acid had been added, and afterwards heated in a bath at 60° C. for an hour. An initial dose of 100 million was given and this was repeated at intervals of five days, the number of organisms being increased at each successive injection until a maximum of 1600 million was reached. Out of twenty-eight cases of nasal discharge treated, twenty-three were cured, but five showed no improvement after eight doses. In two of the latter cases numerous diphtheroid bacilli were present in the discharge, which was slight in amount but persisted for several weeks. Among the successful cases the following table shows the number of doses given :

2 doses . . .	5 cases	5 doses . . .	3 cases
3 „ . . .	4 „	6 „ . . .	2 „
4 „ . . .	7 „	7 „ . . .	2 „

In the case of one patient, aged 2 years, who had a profuse nasal discharge which only gave a few colonies of *Staphylococcus aureus* when cultured on agar, Dr. Rajchman isolated a small gram negative diplococcus on calf serum. A vaccine was made with this diplococcus and after three doses of 20, 30, and 40 million respectively the discharge ceased.

With regard to ear discharge fourteen cases were treated, of which eight recovered while six remained chronic. In the unsuccessful cases the infection was very mixed, diphtheroid organisms being present in the discharge in three cases and bacilli of the *coli* group in two cases. The following list shows the number of doses given to the successful cases :

1 dose . . .	2 cases	4 doses . . .	2 cases
2 doses . . .	1 case	5 „ . . .	1 case
3 „ . . .	2 cases		

The success of the vaccine treatment of nasal and ear discharges is difficult to prove, but from my experience at Plaistow Hospital I am led to the conclusion that with regard to nasal discharges a

cure is obtained more quickly with vaccine treatment than with ordinary methods. The same statement, however, cannot be made in the case of ear discharges. Its failure in this condition may be due to the number of different organisms often present in the discharge.

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- (3) WALKER, N. H.—'Public Health,' 1913, xxvi, p. 130.
- (4) WATERS, W. H.—'Journ. Am. Med. Assoc.,' 1912, lvii, p. 546.
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COMPLETE OCCLUSION OF THE TRACHEA DUE TO INJURY TO THE CRICOID CARTILAGE AFTER INTUBATION AND TRACHEOTOMY. OPERATION AND RECOVERY.

By D. F. RIDDELL, M.B., Ch.B.,

Assistant Medical Officer, Brook Fever Hospital, London.

A BOY, aged $2\frac{6}{12}$ years, was admitted to the Brook Hospital on January the 15th, 1913, at 3 a.m. Certified diphtheria.

History.—No previous illness.

January the 13th : Croupy cough.

January the 14th : Sore throat, glands of neck swollen.

Admission note.—Patches of membrane on both tonsils, laryngeal stridor, slight recession, colour and pulse good.

January the 15th, 7 a.m. : Deep recession, cyanosis, pulse rapid, small, intubated, immediate relief.

January the 18th : Tube out at 11.30 a.m. Child comfortable 4 p.m. Sudden attack of dyspnœa. Re-intubated.

Between January the 18th and February the 1st, the child was intubated three times for sudden bad attacks of dyspnœa, on one occasion after an interval of four days. There was no difficulty experienced and nothing abnormal noted.

February the 1st, 2 a.m. : Intubation tube coughed up. Urgent dyspnœa. Tracheotomy. Artificial respiration was done for fifteen minutes before the child came round. As the tracheotomy had to be done in a hurry, and the patient was a child with a short, fat neck, the cricoid was cut through.

Varying attempts were made to get rid of the tracheotomy tube, but it was early noted that the child made no attempt to breathe by

mouth or nose, and blocking of the tracheotomy wound caused almost immediate signs of suffocation.

February the 23rd: Intubation tried but smallest size tube could not be passed. A very distinct and definite obstruction to the passage was noted and further measures were determined on. Unfortunately at this point the child developed a severe attack of chicken-pox and the further treatment had to be deferred.

April the 2nd: Child free from varicella.

Chloroform was given and a low tracheotomy done. Just as I proceeded to open up the old tracheotomy wound, however, the child showed signs of collapse, and it was considered advisable to postpone further operation that day.

April the 5th: Trachea laid bare to-day and opened at old tracheotomy wound. A dense cartilaginous mass was found at the level of the cricoid completely closing the lumen of the trachea. This mass, which appeared to be partly collapsed cricoid cartilage and partly new growth, was divided by two cross incisions and a portion was removed from the centre.

The external wound was then stitched up and the child intubated, the tracheotomy tube being left in. The after-history may be summarised as follows:

April the 11th: Tracheotomy tube removed, child breathes freely and is comfortable with intubation tube.

April the 18th: Intubation tube coughed up. Sudden spasm of dyspnœa. Tracheotomy tube had to be replaced.

From April the 18th to June the 19th the child had a perforated tracheotomy tube in as well as an intubation tube. The tracheotomy tube was kept in during that time, as it was found that immediately the intubation tube was coughed up or removed to be cleaned the child became very distressed and cyanosed.

Both tubes were changed every third day during this period, and the external opening of the tracheotomy tube was kept plugged except when the intubation tube was out.

On June the 18th the tracheotomy tube was dispensed with and on June the 21st the intubation tube was also removed.

On June the 23rd the child was re-intubated after an interval of two days, during fourteen hours of which the child gradually became distressed.

The intubation tube was only left in then for twenty-four hours.

Thereafter the case is merely a record of repeated intubation, the intervals between each intubation gradually becoming longer until the tube was finally dispensed with on November the 20th.

During this period of repeated re-intubation it was noted that the child's voice gradually increased in strength and volume. After the final removal of the tube the voice became gradually clearer, though it was still somewhat husky at the date of discharge.

The discharge note reads: January the 10th, 1914. "Child well and strong. Heart-sounds clear, regular. Voice slightly husky but strong. Has occasional attacks of stridor when excited, but not sufficient to cause any anxiety."

The child was seen again in June, 1914 (*i. e.* eight months after the last re-intubation). He was then very well and strong. His parents reported that he had had a few bad attacks of dyspnœa shortly after his return, but that they thought these had been brought on by excitement or temper. Recently he has had no attacks of stridor and his voice is clearer and stronger.

The interest of this case lies in the complete occlusion of the trachea, due probably to two causes.

It is practically certain that some injury was done to the cricoid cartilage and surrounding tissues by the intubation tube either at the primary intubation or the first re-intubation. There was, as a result, probably some destruction of the cartilage, which would account for the sudden urgent dyspnœa requiring immediate tracheotomy on February the 1st. There was further the fact that the cricoid cartilage was injured when the tracheotomy was done. The case was then so urgent that the operator had not time to consider anything beyond the immediate opening of the trachea.

The complete occlusion of the trachea subsequently is somewhat unusual but is not irremediable.*

The use of the intubation tube in the first instance after the operation was purely mechanical to prevent the collapse of the trachea, due to extensive scar tissue, and also to keep the stricture patent.

In the later stages the tube acted as a dilator of the resultant stricture.

So far as could be judged the stricture was annular but with the most prominent part on the back wall of the trachea, as the tube had to be tilted slightly backwards to enable it to pass the obstruction.

From June the 23rd onwards the intubation tube was never left in longer than eighteen hours on any occasion to avoid any risk of a pressure ulcer.

The intubation tubes employed during the time that both the

* Barlow, H. W. L., "Some Recent Intubation Statistics," 'M. A. B. Ann. Report Suppl.,' 1904, pp. 326 and 327.

tracheotomy tube and the intubation tube were in simultaneous use were of the Bayeux pattern. These, being short, kept clear of the tracheotomy tube. After the tracheotomy tube was dispensed with, the O'Dwyer pattern (vulcanite tubes) was used, as these, I consider, are always more satisfactory in actual use than the Bayeux pattern.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Provincial Meeting at the Royal Victoria Hospital, Bournemouth, June the 6th, 1914.

The President, Dr. LEONARD G. GUTHRIE, in the Chair.

Siamese Twins.—Dr. A. C. GREY-EDWARDS.—The twins, which were delivered by version, were attached to each other by the sides of the head and were well-developed. The union was a bony one and the brains were separate. One twin lived twelve hours and the other eighteen.

Wound of Ciliary Body with threatening Sympathetic Ophthalmitis.—Mr. E. E. MADDOX reported a case in which the eye had been pierced with a broken cane. Cure was effected by thermo-cautery and a flap drawn over by super-corneal sutures.

Case of Tumour for Diagnosis.—Dr. F. C. BOTTOMLEY showed a child, aged 4 years, who had had flaccid palsy of the lower limbs and incontinence of urine and fæces for eighteen months. Wassermann's reaction was negative. X-rays showed that a mass of bone was present.

Paralysis of Cervical Sympathetic.—Mr. HAROLD BURROWS showed two cases in which labour had been difficult and instruments had been used. One was a woman and the other a child, aged 14 months. Both had ptosis, enophthalmos, and contraction of the left pupil.

Congenital Dislocation of Right Humerus.—Mr. BURROWS.—The child, now aged 11 years, showed considerable limitation of movement with wasting of the shoulder muscles and marked inward rotation of the arm.

Congenital Dislocation of Right Radius.—Mr. BURROWS.—Birth was by breech presentation and labour was difficult. This abnormality was observed shortly after birth. The child was now aged 7 years.

Case of Tuberculosis cured by Trypsin.—Dr. E. CORTIN showed a child, aged 4 years, who had been cured of generalised tuberculous abscesses by injections of trypsin into the surrounding healthy tissue.

Case of Pseudo-Hypertrophic Paralysis.—Dr. J. T. LEON showed a boy, aged 8 years, with marked wasting of the lower part of the pectoral and

latissimus dorsi and hypertrophy of the calf-muscles and deltoid. For twelve months he had been unable to walk any distance and occasionally fell down. His brother, aged $4\frac{1}{2}$ years, had a similar gait.

Case of Asthma.—Dr. W. J. MIDELTON showed a child, aged 5 years, whose father was rheumatic and whose mother had suffered from asthma all her life. The asthma in the child had followed double pneumonia three years previously and had occurred periodically since.

Mongolism with Alopecia.—Dr. W. J. MIDELTON showed a case, aged 5 years, the last of five children. The alopecia had improved under croton oil and cantharides locally and thyroid extract internally.

Discussion on Status Lymphaticus.—(*vide* p. 465).

Abstracts from Current Literature.

Medicine.

Dentition in children (*Arch. de Méd. des Enf.*, 1914, xvii, p. 335).—J. Comby, like Feer (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 226), denies the existence of diseases of dentition. Fever, diarrhoea, bronchitis, convulsions, meningitis, and dermatoses attributed to dentition, are always due to some other cause.

J. D. ROLLESTON.

The origin of purulent parotitis in childhood (*Jahrb. f. Kinderheilk.*, 1914, lxxix, p. 574).—E. Handrick records four cases. The first was a fatal case due to ascending infection of the duct in a hand-fed female child, aged 6 days, following thrush. The other three were in children aged 13, 16, and 18 months respectively, and were secondary to otitis media. All three recovered after incision. The staphylococcus was the pyogenic organism found in all the four cases (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 227, and 1913, x, p. 465).

J. D. ROLLESTON.

Spasmodic stricture of the œsophagus in a child, aged 16 months (*Rev. hebdomadaire de Laryng.*, 1914, i, p. 380).—Larozière records a case in which spasm of the œsophagus caused by swallowing a button persisted twenty-five days after its expulsion and yielded to progressive dilatation by bougies.

J. D. ROLLESTON.

A neurosis of stomach and muscles of deglutition (*Am. Journ. Dis. Child.*, 1914, vii, p. 315).—A. A. Howell records a case of a curious nervous disorder in a boy, aged 8 years. He was subject to attacks of what was thought to be "water-brash." In an attack the mouth would be opened, and the tongue drawn tightly backward and upward towards the roof of the mouth, so obstructing respiration. Saliva would flow freely from the mouth, and noises resembling those of vomiting were emitted. The attack usually ended when cyanosis was produced. A sudden inspiration drew saliva into the larynx, setting up coughing and often vomiting. The attacks occurred as often as every ten minutes during night-time and seriously

impaired the child's health. Treatment at home was quite unsuccessful, but removal to hospital produced a prompt cure. REGINALD MILLER.

Neurotic vomiting in an infant (*Am. Journ. Dis. Child.*, 1914, vii, p. 48).—W. B. McClure reports a case of vomiting with head-rolling in an infant, aged 3½ months. The vomiting first began when weaning was attempted. It was preceded by chewing movements of the mouth, and appeared similar to the process of rumination, except that the food was not re-swallowed. Vomiting occurred only with fluid food, and under a diet of very thick porridge made with farina and milk the symptom ceased.

REGINALD MILLER.

Periodical vomiting with acetonæmia (*Jahrb. f. Kinderheilk.*, 1914, lxxx, p. 1).—G. Hilliger.—The children affected are usually feeble and easily excited, of neuropathic diathesis, between the ages of three and twelve years, and of good social standing. The vomiting comes on suddenly, the child becomes peevish, the face pale, headache severe, and exhaustion marked. The condition lasts from twenty-four to forty-eight hours. The pulse remains low, but quickened, the appetite is lessened, and thirst marked; the temperature is not elevated, frequently lowered; the stools are somewhat solid. Acetone is marked in the breath and urine. The chief element in the treatment is the addition of carbohydrates to the food, and this may be given by means of enemata as of grape-sugar or infusion of an isotonic solution of grape-sugar.

F. R. B. ATKINSON.

Medical versus surgical treatment of pyloric stenosis in infancy (*Journ. Amer. Med. Assoc.*, 1914, lxi, p. 2014).—L. E. Holt is of opinion that a temporary pyloric spasm undoubtedly occurs in many conditions, as in the projectile vomiting of cerebral disease, but that definite, persistent spasm of the pylorus without hypertrophy has yet to be proved. The medical risks in connection with these cases are: (1) There may be death from acute inanition; this in the most acute cases occurs quite rapidly. (2) There is the danger of marasmus or slow inanition from the prolonged duration of the symptoms. While this risk is not so great in private practice, it exists, and in hospital practice and also among patients in poor surroundings it is very serious. There are considerable risks in waiting day after day and sometimes week after week when a child is barely holding his weight or losing but 1 or 2 oz. a week. The physician frequently does not realise how near the danger line he is. Especially is this likely to be the case if the vomiting has become infrequent and faecal stools are present. To allow the weight to fall gradually from eight pounds to seven, six, or even lower, is to take great chances; and although possibly the majority of the patients may recover, every now and then an unexpected death occurs without warning. (3) There is the risk of intercurrent disease developing while a child is in a greatly enfeebled condition. This is a very important consideration in a hospital where treatment must usually be continued from six to ten weeks, and it has some weight even in private practice. (4) There is the risk of sudden death, which may come without any assignable cause. It has happened that children who seemed to be doing fairly well have collapsed suddenly and died in a few hours, the necropsy giving no explanation. This has occurred when the food taken seemed adequate so far as its caloric value was concerned, when the weight was stationary or showed only an insignificant loss and when the vomiting had practically ceased. At

present the evidence is that patients who get well without operation recover completely. The surgical risks in operations for pyloric stenosis are partly essential and partly accidental. The essential risks are those of shock, of non-union because of the child's poor nutrition, and the danger of exhaustion owing to the fact that the difficulties of feeding have not been altogether removed by the operation. Of much greater importance are the accidental risks, largely due to faulty technique; these are, of course, greatly lessened by experience on the part of the operator. Then there are the risks of hæmorrhage, of leakage, of obstruction, of infection and other accidents which may follow any abdominal operation. With an operator experienced in these cases and a patient in fair condition, the operative risk is much less than one would anticipate. It is a constant surprise to see in these patients how small is the amount of shock of an abdominal operation which rarely lasts less than forty or forty-five minutes. The younger the infants the less the shock appears to be. In private practice, if the best environment, good nursing and proper medical attention can be commanded, the risks of the medical treatment are small and many patients will recover without operation. But there will always be a certain number of patients for whom surgical intervention will be required. If the symptoms are severe, early operation offers more chances of recovery. Even if the surgical risks are considerable they are short, while the medical risks are prolonged and the dangers multiply with the duration of the symptoms. An early diagnosis adds much to the chances of success by any method of treatment. In some cases the symptoms have lasted so long and the condition is so critical in consequence of the rapid loss in weight that immediate operation should be advised as offering the only chance of recovery. Under other circumstances every child should have the benefit of a fair trial with medical treatment. The duration of this in hospital practice will depend on the conditions present. If the symptoms are severe a day or two may suffice; if less acute, a delay of a week or ten days may be permitted. Operation should be done not because a case is classed as spasmodic or as hypertrophic, but because mechanical obstruction of a dangerous degree exists, whatever its suspected nature. The indications for operative interference are: (1) no diminution of the vomiting or the gastric peristalsis by stomach washing and diet; (2) a steady loss of weight of from 1 to 2 oz. a day; (3) marked gastric retention, and (4) absence of fæcal stools. The presence of a tumour is not essential. The author's early experience led him strongly to favour the medical treatment of these cases. Increased experience, however, has shown him that the average case medically treated, unless it shows improvement almost at once, is likely to run a very prolonged course even though the child may ultimately recover. From six to twelve weeks of continuous treatment has usually been found necessary. This is in marked contrast to the rapid improvement which has taken place in all the children who have recovered after operation. The post-operative treatment is very important. Emphasis should be laid on four points: hypodermoclysis, feeding, castor oil and posture. Hypodermoclysis is useful immediately before or after operation as a means of introducing water into the body. Normal saline solution with 4 per cent. dextrose is used; of this from 100 to 200 c.c. are slowly introduced either between the shoulders or into the abdominal walls. In feeding, breast-milk is indispensable. Food should be given as soon as the child has fairly recovered from his anæsthetic, or about four hours after operation, giving two teaspoonfuls of breast-milk every two hours, alternating this with two teaspoonfuls of boiled water. On the following day the

interval is made three hours, and the milk and water are each increased to half an ounce. At the end of forty-eight hours, one ounce of breast-milk is given every three hours alternating with one ounce of water. By the end of a week the child is usually taking from two to three ounces of pumped breast-milk every three hours alternating with boiled water. By the tenth or twelfth day in most cases the child is put to the breast, but the amount of milk allowed is limited for the next week or two. A teaspoonful of castor oil is administered at the end of thirty-six hours and is usually followed by free evacuation from the bowels, which in many cases have not been freely moved up to that time. The child's bed is inclined at an angle of about 135 degrees or more, the head being raised. This posture facilitates the expulsion of gas from the stomach and greatly diminishes the chances of vomiting. The child is usually kept in this position for four or five days. Whether in a given case we shall decide in favour of operation or medical treatment will then depend largely on the severity of the symptoms and the conditions under which the child is seen. To subject every infant with pyloric stenosis to so serious an operation as laparotomy for a condition in which at a low estimate 50 per cent. recover without it seems hardly justifiable. It is a mistake to turn every case over to the surgeon as soon as the diagnosis is made, as some would have us do. On the other hand, the position that "operation is never under any circumstances justified" in these cases is untenable. The medical treatment for patients not operated on consists in careful feeding and stomach-washing. The gastric lavage should be practised twice a day; the water should be used warmer than usual, that is up to 112° F. If it can be secured, breast-milk is the preferable food, but one not rich in fat is essential. The common practice of weaning as soon as symptoms develop is most unwise. In default of breast-milk a modified milk mixture low in fat should be employed. With respect to quantities and intervals of feeding, cases respond differently. Usually 1 to 3 oz. are given at three- or four-hour intervals, with water in small quantities between the feedings. There are, however, some children who seem to do better on much smaller quantities, that is, $\frac{1}{2}$ oz. every hour, especially if the food is breast-milk. In greatly prostrated patients hypodermoclysis may be used twice a day. Rectal feeding is little assistance except for a very short time. Drugs are of little or no value, nor are local applications of heat over the epigastrium as advised by many. Aspiration of the stomach to determine the degree and rate of emptying is of much assistance in deciding the frequency with which these children should be fed and the amount of food offered at one time. Its value is not appreciated.

T. R. WHIPHAM.

Acute enteritis and hemiplegia (*Arch de Méd. des Enf.*, 1914, xvii, p. 445).—**Carretier** records a case in a female infant, aged 20 months, in whom right hemiplegia, preceded by convulsions, strabismus and coma, followed an attack of muco-membranous enteritis. Recovery took place after three months. The hemiplegia was attributed to encephalitis.

J. D. ROLLESTON.

Röntgen pictures of the lower bowel in infants (*Post-Graduate*, 1914, xxix, p. 497).—**H. D. Chapin** finds that the whole intestine can be reached without force, and that it is impossible to pass a high tube as it passes into the root of the sigmoid flexor and then turns round.

F. R. B. ATKINSON.

The clinical picture of bacillary dysentery in infants and young children (*Monatsschr. f. Kinderheilk.*, 1914, XIII, p. 39).—**K. Blühdorn. Bacteriological findings in bacillary dysentery in infants and children** (*Ibid.*, p. 51).—**R. Schild.**—Blühdorn describes cases of the disease and considers the symptoms, prognosis and treatment. Schild finds that in a large number of cases bacilli similar to the pseudo-dysenteric bacilli are found; in other cases bacilli not to be identified with any of the known species of pseudo-dysenteric bacilli were seen.

F. R. B. ATKINSON.

Intestinal hæmorrhage a rare complication of croupous pneumonia (*Gazz. med. ital.*, 1914, LXV, p. 241).—**S. Riva-Rocci** reports the case of a child, aged 10 years, admitted with a croupous pneumonia of the right upper lobe and with unequivocal symptoms. Collapse and pallor occurred on the fourth day, with copious evacuation of tarry stools. Improvement in the grave general condition took place almost immediately and a good recovery was made. The explanation of the case was not clear—either the general infection had modified the condition of the blood or had produced a mechanical condition favourable to rupture of a vessel.

VINCENT DICKINSON.

Surgery.

Congenital pyloric stenosis (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 353).—**H. M. Richter** reports a series of twenty-two cases of pyloric stenosis in infancy in all of which he operated with three "operative deaths," and one death subsequent to operation which apparently was not due either to the operation or to the original disease. Of the twenty-two cases nineteen were of the type described as hypertrophic pyloric stenosis and three of the type known as spasmodic. In all of the nineteen a definite tumour was demonstrated at operation, and in eighteen it was palpable beforehand through the abdominal wall. In none of the cases was there any accompanying congenital malformation, though in one a particularly short mesocolon made it impossible to do a retrocolic gastro-jejunostomy. Fifteen of the patients were males and all were the first-born of their parents except one, and in this case the first-born probably had the same condition. The author emphasises the fact that it is particularly important that the Röntgen ray as a diagnostic measure be limited to determining the rate of emptying the stomach, not the patency of the pylorus. To exclude a diagnosis of hypertrophic stenosis on the basis of the passage of bismuth is sure to lead to serious error, and two cases are quoted in which operation was advised against on these grounds; in both the diagnosis was confirmed later, in one by necropsy and in the other at the delayed operation, which failed to save the baby. Of the author's twenty-two operations nineteen were typical posterior gastro-enterostomies with two deaths. In two cases a submucous pyloroplasty was performed and in one a divulsion of the pylorus. These three cases died, one as the result of the child's general condition, operation having been delayed for too long, and two as the result of faulty technique. Of the nineteen patients who survived operation one died from vomiting and diarrhœa after an illness of six days. In two the abdomen had to be reopened, one for acute obstruction owing to adhesions eight weeks after the primary operation and one for a volvulus which was relieved. No post-operative sequelæ occurred in any of the last fourteen cases. The author's

first case occurred five years ago and all of the eighteen living patients are still under observation. There has been no vomiting or other intestinal disturbance since their discharge from hospital. T. R. WHIPHAM.

Pyloric obstruction in infants (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 2019).—W. A. Downes reports a series of 22 cases in which operation was undertaken for congenital pyloric obstruction. Of the 22 patients, 17 were males and 5 females; 18 were breast-fed entirely; 2 part breast-fed and part bottle-fed, and 2 bottle-fed; in 14 cases the patient was the first baby; in 4, the second; in 2, the third, and in 2, the fourth. Posterior gastro-jejunostomy was performed in 21 cases and the Weber operation of partial pyloroplasty in one case. Fifteen cases recovered from the effects of the operation, but 2 died subsequently: 1 from diphtheria and 1 from gastro-enteritis 16 days after operation. Of the 7 fatal cases no cause for death could be found in 4, 1 showed no evidence of repair, and 2 succumbed as the result of faulty technique: 1 from hæmorrhage due to a catgut suture having been passed through the round ligament of the liver, and the other from general peritonitis from leakage. In every case a pyloric tumour was found. The stomachs were thickened and somewhat œdematous and about half of them were dilated. The author is of opinion that ether should be the anæsthetic used. The after-care of the patient is extremely important, and much depends on the judicious use of stimulants in the form of brandy, atropine and caffeine, and also the proper use of fluids by hypodermoclysis and the Murphy drip. Feeding should be started as soon as possible after operation; small quantities of water alternating with diluted breast-milk were given hourly, beginning as early as the second or third hour in several cases. The amount should be increased gradually, and if it is well borne the child may be put back to the breast in forty-eight hours. It is important to elevate the head of the bed just as soon as reaction is well established, as this facilitates the escape of gas and greatly lessens the tendency to vomit. A colon irrigation should be given in twenty-four hours, or sooner if there is much distension. The first fæcal stool usually occurs from twenty-four to forty-eight hours after operation; if not by this time, from one to two teaspoonfuls of castor oil should be administered. The writer believes that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present immediate operation is demanded. T. R. WHIPHAM.

Hypertrophic stenosis of the pylorus in infants (*Thèses de Paris*, 1913-1914, No. 372).—E. P. A. Lefèvre.—The thesis contains brief histories of twenty-four cases published in France, including an original one in a male infant, in whom the symptoms first appeared six days after birth. X-rays showed enormous gastric dilatation and an impermeable pylorus. Medical treatment was unsuccessful and a submucous pyloroplasty was performed when the child was forty-two days old. Death took place four hours after the operation. The necropsy showed the characteristic muscular hypertrophy. Histologically no inflammatory lesions were found. J. D. ROLLESTON.

Congenital occlusion of the small intestine (*Thèses de Paris*, 1913-1914, No. 401).—H. Monnier.—Congenital stenosis of the small intestine in the new-born is rare. It must be diagnosed from imperforate anus or acute peritonitis. It is probably due to a foetal infection localised either in

the intestine, the vessels or the peritoneum. Immediate surgical treatment is required, if possible entero-anastomosis, or at least enterostomy. The prognosis is almost always fatal, only one case, reported by Foekens, having recovered. The thesis contains the histories of thirty-four cases, including the following original one. A male infant, aged 2 days, was brought to hospital for continual vomiting and because he had not passed meconium or fæces since birth. Laparotomy was performed, and the small intestine was found to consist of an upper and much dilated portion and lower and atrophied portion. The intestinal coils were bound together by bands. Death took place four hours after the operation. Post-mortem the occlusion was found in the jejunum.

J. D. ROLLESTON.

Resection of the cæcum and a portion of the small intestine (*L'Echo Méd. du Nord*, 1914, xviii, p. 126).—**Bertin** removed 40 c.cm. of small intestine and the cæcum from a child, aged 11 years. Eventration of the mass had occurred as a result of an ulceration of the abdominal wall originating from a large fistulous abscess connected with Pott's disease. The child died six days after from tuberculous meningitis, without any peritoneal infection.

F. R. B. ATKINSON.

Umbilical sinus resulting from a pin in the appendix (*Austral. Med. Journ.*, 1914, iii, p. 1567).—**R. M. Downes**.—The patient was a girl, aged $3\frac{1}{2}$ years. The pin may possibly have been introduced into an urachal cyst, but the author considers it more probable that it had been swallowed and passed into the appendix.

F. R. B. ATKINSON.

Diseases connected with Meckel's diverticulum (*Journ. Amer. Med. Assoc.*, 1914, lxii, p. 1624).—**J. P. C. Griffith**, as a text for a *résumé* of the affections of Meckel's diverticulum, records the case of a male infant, aged 19 months, who some nine months previously was said to have suffered from "auto-intoxication" and "scurvy." Three months previously he began to pass blood in the stools and a little later had temporary suppression of urine and oliguria. Attacks of paroxysmal abdominal pain and flatulence occurred and occasionally there was vomiting. Constipation was troublesome and the patient became very anæmic and weak. Some intestinal ulceration was suspected and the question of laparotomy was discussed, but it was not decided upon owing to the uncertainty of the diagnosis and the weak condition of the patient. Gelatine and small doses of laudanum were given by the mouth and horse-serum was injected with the idea of controlling the hæmorrhage. The blood-count showed a secondary anæmia, but no leucocytosis; the percentage of polymorphonuclears, however, was high. After a slight improvement the child relapsed, having a recurrence of the melæna and very severe abdominal pain. The temperature showed a moderate irregular fever and the child died in a state of exhaustion. Post-mortem a localised peritonitis was found just below the umbilicus, and between the intestinal coils there was a small abscess in the centre of which was a Meckel's diverticulum. Its walls were thick and chronically inflamed and at the tip was an ulcer of the mucosa with a purulent exudate in the corresponding serous surface. The remainder of the intestine including the appendix appeared normal. The mesenteric glands were enlarged, the liver was fatty, and the kidneys showed an acute diffuse nephritis.

T. R. WHIPHAM.

A case of acute chylous ascites (non-fatty, pseudo-chylous, lactescent, or milky type) in a boy, aged 8 years (*Am. Journ. Dis. Child.*, 1914, viii, p. 50).—**F. Huber** and **H. M. Silver** divide chylous effusions into (a) true chylous due to the presence of chyle, (b) chyloform or fatty, due to emulsified fat, (c) those due to some opalescent substance unknown. They describe a case of the third variety of uncertain origin. Operation was performed and drainage was made into the thigh by means of silk threads. The result was excellent. Gaudin has reviewed the whole subject and gives a complete bibliography of 281 cases up-to-date in a paper "Patogenese und Klassifikation der milchartigen Ergüsse" (*Ergebn. d. inn. Med. u. Kinderh.*, 1913, xii, p. 219). **F. R. B. ATKINSON.**

Intestinal obstruction due to thread-worms (*Prag. Med. Woch.*, 1914, xxxix, p. 197).—**Doberauer** operated on a boy, aged 9 years, for intestinal obstruction of three days' duration. Twenty-one worms were found in the distended portion of the ileum close to the cæcum. The ileum was opened and sutured. Complete recovery promptly followed. Santonin given subsequently brought away three worms by the anus and two by the growth. The presence of worms was suspected owing to the child's appearance before operation. Santonin should be always given after operation to remove worms from other parts of the tract than the site of operation.

M. D. EDER.

Thread-worms in relation to appendicitis (*Practitioner*, 1914, xcii, p. 657).—**H. Lett** classifies thread-worms in the appendix into four groups: (1) Cases in which no symptoms are present. (2) Cases in which there is no acute attack but pain is complained of in the right iliac fossa from time to time. (3) Acute attacks "thread-worm appendicitis." The child is not nearly so ill as is to be expected from the examination of the abdomen. The rigidity is not so marked as in general peritonitis. The pulse is no quicker than could be accounted for by the rise of temperature. (4) Cases presenting the typical features of severe appendicitis. The results of operation in the first three groups are distinctly good. In the fourth the prognosis depends on the condition found at operation, and on the day of the attack, on which operation is performed. **F. R. B. ATKINSON.**

Ascaris lumbricoides as a complication of a surgical operation (*Journ. Amer. Med. Assoc.*, 1913, lx, p. 1953).—**Mary D. Allen** states that in Persia nearly every person, whether child or adult, harbours several if not scores of ascarides. A Jewish girl, aged 16 years, married, was admitted to hospital with symptoms of right pyosalpinx, but operation was only allowed as a last resource. Ascaris eggs were present in the stools and on that account 3 gr. of santonin were given before the operation, but up to the time of operation no worms were passed. On opening the abdomen the peritoneum was found to be markedly thickened and when it was incised 2 qts. of foul-smelling pus were evacuated. The uterus was at the bottom of the cavity, small and adherent to the intestines. The right tube and ovary were tied up in a mass of adhesions to the right of the cavity and no attempt was made to free them. The cavity was irrigated and the incision closed and drained above. During the subsequent four weeks the full-sized living worms were found at intervals either under the dressings or in the cavity, while numerous others were passed by the rectum. At no time was there any suggestion of a faecal odour in the pus or signs of a faecal fistula.

The patient died two months after the operation with phlegmasia alba dolens of the left leg. No post-mortem was apparently made. How the worms found their way into the peritoneal cavity could not be explained, as in spite of frequent fluid stools no other contents of the intestines escaped. There appears to have been some relation between the doses of santonin which were given and the appearance of the worms in the wound as they were found soon after the drug was administered. The pus was always more abundant on the days that the worms appeared and for several days afterwards.

T. R. WHIPHAM.

Congenital atresia of the rectum; a case of atresia ani analis (*Jahrb. f. Kinderheilk.*, 1914, LXXIX, p. 11).—H. Hilgenreiner discusses the literature of the subject and describes a case in a child, aged 17 days. He believes that besides the forms at present known of atresia ani perinealis, præscrotalis, scrotalis and suburethralis, another form, not at present described, of atresia ani analis exists, in which the fistulous opening in the anal fossa lies quite close to the closed rectum, and thus appears under the form of congenital atresia of the rectum.

F. R. B. ATKINSON.

Congenital cyst of the rectum (*Gaz. hebd. des Sci. Méd. de Bordeaux*, 1914, xxxv, p. 128).—Petit de la Villéon removed a rectal cyst from a boy, aged 2 years, which had been present since birth; there was also congenital phimosis. Congenital cysts of the rectum are very rare.

F. R. B. ATKINSON.

Three cases of hydatid cyst of the liver in children (*Gaz. hebd. des Sci. Méd. de Bordeaux*, 1914, xxxv, p. 219).—H. L. Rocher.—Case 1.—Boy, aged 14½ years. Operation under local anæsthesia with novocain and cocaine. Recovery. Case 2.—Boy, aged 9½ years. Accustomed to play with a dog which later died of hydatid cysts. Purulent right pleurisy developed nearly a month after operation. Recovery. Case 3.—Girl, aged 8 years. Post-operative scarlatina. Recovery.

F. R. B. ATKINSON.

Hydatid cyst of the liver in a young girl, aged 11 years (*Arch. de Méd. des Enf.*, 1914, xvii, p. 364).—Mlle. Condat.—Operation removed ½ pint of hydatid fluid from the cyst. Recovery took place.

F. R. B. ATKINSON.

Congenital hernia of the diaphragm (*Prag. Med. Woch.*, 1914, xxxix, p. 131).—Doberauer regrets that attention is not more often directed to the diagnosis of these cases; by thorough physical examination and X-rays he is convinced that many cases could be discovered and treated surgically. He records a case of death in a girl, aged 18 years, who died just on admission. She had been 8 days ill with a diagnosis of gastric ulcer. Post-mortem showed congenital hernia of the diaphragm, the stomach enormously distended, and the transverse colon and the mesentery in the left thoracic cavity. The left lung was compressed, and the heart and blood-vessels much displaced and compressed. Investigation showed that at the age of four there had been an attack similar to the one from which she died and another one some years later. Had the condition been thought of at the age of four a plastic operation could have been carried out.

M. D. EDER.

A case of strangulated diaphragmatic hernia (*Austral. Med. Gaz.*, 1914, xxxv, p. 249).—**W. M. A. Fletcher** was called to a child, aged 2 years, and found him dead. Post mortem the heart was found under the right ribs, the heart region being occupied by the stomach, pylorus and some omentum.

F. R. B. ATKINSON.

Right inguinal hernia of the ovary and tube (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 451).—**A. S. Barr** reports the case of a girl, aged 12 years, who for some years had had a rupture for which she wore a truss. The hernia had always been easily reduced, but one day while not wearing her truss she coughed and a swelling appeared in the right inguinal region which could not be returned. At the operation the sac was found to contain the right ovary and tube, but no bowel or omentum. The patient made a good recovery.

T. R. WHIPHAM.

Strangulated tubo-ovarian hernia in an infant (*Journ. Amer. Med. Assoc.*, 1914, LXII, p. 772).—**A. B. Eustace** and **R. W. McNealy** report the case of a coloured infant, aged 6 months, who had been ruptured since soon after birth. The hernia, which was a right inguinal one, became strangulated and at operation was found to consist of a twisted tube and ovary. These were resected and the child made a good recovery.

T. R. WHIPHAM.

Infantile paralysis: its surgical treatment (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1705).—**E. P. Magruder** presents a preliminary report on a case of infantile paralysis which attacked a boy at the age of 6 months, leaving the right leg completely paralyzed. At 3 years of age, when the patient was seen, the leg was in a state of complete flaccid paralysis; the thigh hung limp from the hip-joint with slight flexion of the knee; there was talipes equinus and a marked difference in the measurement of the two limbs. The reflexes in the right leg were absent, and with the exception of slight tonicities of the biceps the loss of power seemed complete. When the child stood on the sound leg there was marked external rotation of the right thigh and eversion and abduction of the leg and foot. The capsule of the hip-joint was quite relaxed, and the head of the femur swung freely, partially without the acetabulum. The technique pursued consisted of the transplantation of the biceps tendon into the patella and a double fixation at the ankle-joint by means of three screws. With the foot in the corrected position at right angles to the leg, one screw was passed through the external malleolus, astragalus and calcaneus, another through the internal malleolus almost at right angles to the first, while a third screw was passed through the scaphoid and cuboid, fixing the key of the arch to the foot. The head of the femur was returned to the acetabulum and a plaster-of-Paris cast snugly applied from the foot to the costal margins and allowed to remain on for six weeks. The wounds healed by first intention. Passive motion and massage were then instituted, and the weight of the body gradually applied to the foot, now firmly fixed at the ankle-joint. Minute instructions were given to the mother as to the training of the child to walk, and as an aid to this end a simple device of the foot-bridge effect, with hand-rails, was built outdoors close beside the house for daily exercise. The child held to the rails while his feet were, in the beginning, picked up and carried forward in the earliest attempts to walk. Two perfectly straight strings were laid on the ground between the rails, on

which the child's feet were placed, so that he might be taught, so far as possible, to walk straight from the beginning; this was intended primarily to overcome the external rotation of the thigh, eversion and abducted foot-effect. The power of the biceps soon manifested itself, changing its action from flexion to a very slight extension of the leg. The foot held firmly in the right-angled position. Improvement at first was very slow, and at times discouraging, but progress has continued steadily and without retrogression to date. The gain in strength to the leg, the increase in size of practically all the muscles, the marked growth of the child and the improvement of his mental and physical condition have been most gratifying. He can walk short distances, 50 feet, without any assistance whatever. He can stand the weight of his body on the affected leg without its buckling beneath him. The external rotation of the thigh, with its eversion and abduction effect on the leg and foot, still persists, but as yet no attempt has been made to correct this further than by the use of a little adhesive plaster running from the thigh above the knee on one side across to that of the other which serves as a temporary correction of the deformity. It gives him a wider base on which to walk and stand.

T. R. WHIPHAM.

A new operative treatment for spastic paralysis (*Journ. Amer. Med. Assoc.*, 1913, LXI, p. 1982).—**W. Sharpe** and **B. P. Farrell** find that the usual operation undertaken to improve the condition of spastic paralysis, viz. tenotomies, tendon lengthenings, sections of the posterior nerve-roots, nerve resections, etc., are of only temporary benefit, the spasticity returning in some degree within a year. They advise, therefore, that in those cases of spastic paralysis of the hemiplegic, paraplegic or diplegic type, with a definite history of difficult labour with or without the use of instruments, in which, on ophthalmoscopic examination, signs of intra-cranial pressure are shown in the dilated retinal veins and a blurring and haziness of the optic discs, especially of their nasal halves, a large right subtemporal decompression should be performed to relieve the intra-cranial pressure. If the intra-cranial pressure is extremely high and remains high after operation, a left subtemporal decompression is performed the following month, the operative recovery requiring only a week to ten days. The usual findings are definite cystic formations resulting from a cortical hæmorrhage occurring at birth. The decompression operation is performed merely to offset the effects of the pressure of this hæmorrhage with cystic formation, and the resulting spasticity and mental impairment. The after-treatment consists in the correction of deformities by tendon lengthenings or stretchings of the contracted muscles, the maintenance of corrected positions through the employment of especially adapted and properly fitting braces, and skilled massage in conjunction with short applications of galvanism and faradism, particular attention being given to the weakened and overstretched muscle groups. A careful, systematic course in muscle training is carried on daily. The authors have operated upon a series of twelve cases and find that improvement has been marked. Not only has the spasticity been lessened, but a definite amelioration in the mental condition of the patients has been brought about.

T. R. WHIPHAM.

Multiple hereditary osteogenic exostoses (*Arch. de Méd. des Enf.*, 1913, xvi, p. 692).—**Cazal** describes in detail the occurrence of multiple exostoses in a boy of five, varying in size from a pea to a horse-chestnut, and situated on the ribs, the scapulæ and juxta-epiphyseal regions of the long

bones. The skull, face, sternum, vertebral column and pelvis were not involved. The left ulna had a large exostosis on its lower extremity, causing considerable incurvation of the radius. The left ulna was 6 cm. shorter than the right. The hand was completely pronated, supination being impossible. These exostoses were painless, mostly sessile, but a few were pedunculated. They were first noticed by the mother on the left ulna when the child was 14 months old. The boy was small for his age, but began to walk and cut his teeth at the normal time. The mother was very small, walked late, and had four exostoses on the lower limbs. The maternal grandfather also developed large tumours at the site of an old fracture. Exostoses diminish the growth of the bones from which they spring, owing to premature fracture of the epiphysis with the diaphysis. They are due to errors of bony growth, and were not, in this case at any rate, connected with rickets.

CHRISTOPHER ROLLESTON.

Otology, Rhinology and Laryngology.

Danger signals in suppuration of the middle-ear (*Clin. Journ.*, 1914, XLIII, p. 311).—H. A. Kisch gives the danger-signals for interference in acute suppuration as: (a) temperature over 101° F.; (b) non-subsidence of pain and tenderness and temperature after paracentesis or natural rupture of the tympanic membrane; (c) facial paralysis; (d) vomiting, giddiness, and tenderness; (e) early optic neuritis. In chronic suppuration: (1) diminution of discharge with attacks of pain; (2) non-diminution of discharge after careful treatment; (3) factor of discharge; (4) headache; (5) deep tenderness over the mastoid; (6) deep pain in the ear; (7) sudden increase in deafness; (8) diminution of bone conduction; (9) vertigo and tinnitus; (10) early optic neuritis.

MACLEOD YEARSLEY.

Middle-ear complications of measles in immigrant children (*Am. Journ. Dis. Child.*, 1914, VIII, p. 147).—H. C. Cody.—From June, 1911, to December 1, 1913, 1769 cases of measles were admitted to the Contagious Diseases Hospital at Ellis Island. The average age of the patients was 4.81 years. 321 or 18.2 per cent. developed middle-ear disease, and 29 or 1.6 per cent. mastoid disease. The onset of otitis occurred most frequently after the rash had disappeared. In nearly all cases it was sudden and accompanied by little or no pain. Bacteriological examination showed preponderance of *Staphylococcus aureus*. In some a bacillus (probably Hofmann's) was found. In cases where a streptococcus appeared the attack was more severe. Treatment consisted in keeping the ear clean by frequent and copious irrigations of 1 in 10,000 mercuric chloride solution made up in normal saline.

J. D. ROLLESTON.

Mastoid complications of suppurating ear (*Austral. Med. Journ.*, 1914, III, p. 1473).—J. Murphy describes some cases of mastoiditis, and amongst them one in a child, aged 14 months, which ended successfully after removal of the pus.

F. R. B. ATKINSON.

Laboratory aids in the diagnosis of acute mastoid disease due to acute purulent otitis media (*Med. Record*, 1914, LXXXVI, p. 1).—Gorham Bacon discusses skiagraphy, microscopic examinations of the pus, and daily blood examinations to determine the increase or decrease of leucocytosis and what relative changes are taking place in the cell per cent.

tage. X-ray plates are of value as showing the presence of abnormal mastoid conditions and of anatomical relations. Histological examination of discharge is also valuable. Out of 5496 such examinations, 26.6 were mixed, 24.8 per cent. were streptococci, 12.2 per cent. were pneumococci, 7.4 per cent. staphylococci, 4.8 per cent. showed *streptococcus mucosus capsulatus*, and 1.8 Vincent's spirillum. The remaining 22.4 per cent. were miscellaneous, negative, etc. (*B. pyocyaneus*, *B. tuberculosis*, *B. diphtheriae*, *B. coli communis*, etc.). The author considers that *S. mucosus capsulatus* is the most insidious germ to deal with.

MACLEOD YEARSLEY.

Temporo-sphenoidal abscess secondary to chronic suppurative otitis media; operation; recovery; radiograph findings ('*Cleveland Med. Journ.*,' 1914, XIII, p. 482).—**J. M. Ingersoll**.—A boy, aged 14 years. Left otorrhoea three years, with cholesteatoma. The surgeon was able to recognise and outline fairly accurately the brain abscess by means of stereoscopic radiographs.

MACLEOD YEARSLEY.

The deaf child and his education ('*Cleveland Med. Journ.*,' 1914, XIII, p. 485).—**Grace Burton**.—This is a useful and straightforward paper and is important to the medical profession in that it emphasises the gross ignorance shown by some of its members in all that concerns the deaf and especially the semi-deaf child.

MACLEOD YEARSLEY.

The progress of education of the deaf and dumb and some of the difficulties of aural instruction ('*Med. Record*,' 1914, LXXXV, p. 921).—**Pocock van Baggen** gives a good *résumé* of the progress of deaf education and details of his own methods in reply to the question, "How can we best awaken and improve the hearing power of deaf children?" Like all those who are truly interested in deaf education, he insists that instruction cannot begin too early.

MACLEOD YEARSLEY.

Deaf-mutism (labyrinthine deafness) as a result of purpura hæmorrhagica ('*Journ. Amer. Med. Assoc.*,' 1914, LXII, p. 1723).—**G. W. Stimson** reports the case of a girl, aged 4 years, who was normal in every respect until she reached the age of 23 months, when she had an attack of purpura hæmorrhagica. A day or two later "she went stone deaf and has remained so ever since." The deafness is absolute, her attention not being attracted by any noise, however loud. Tuning-forks placed on the vertex and mastoid processes produce no perceptible change of expression. Speech has been progressively lost and now amounts only to an almost unintelligible "mamma." The diagnosis is labyrinthine deafness due to severe hæmorrhage into both labyrinths at the time of the purpura hæmorrhagica, causing complete disorganisation of the parts from pressure.

T. R. WHIPHAM.

Five hundred examinations of the nose and throat in an institution for delinquent boys ('*Med. Record*,' 1914, LXXXV, p. 480).—**Max Toeplitz** gives an interesting summary of the Hawthorne School for Jewish Boys in New York. Some 59 $\frac{1}{3}$ per cent. of tonsils and adenoids requiring operation occurred. Apparently the surgeon was interfered with on account of the large percentage of operations needed.

MACLEOD YEARSLEY.

The involution of the naso-pharynx and its clinical importance ('*Amer. Journ. Med. Sci.*,' 1914, CXLVIII, p. 61).—**Sohier Bryant** postulates

the vulnerability of the naso-pharynx as due to three causes: man's assumption of an upright position, the growth and development of the brain, and the retrograde metamorphosis of the nose, face and teeth of man. The space is of supreme importance because (1) in many diseases the primary symptom is found therein; (2) the secondary symptoms are traceable from the naso-pharynx; (3) its management controls the distant manifestations of the disease; (4) the individual's immunity from disease is in direct proportion to the resistant power of the naso-pharynx; and (5) man is more subject to air-borne diseases than quadrupeds. The evolution and involution of the naso-pharynx are then discussed and the author concludes with a partial list of the diseases which are acquired *viâ* this space.

MACLEOD YEARSLEY.

Malignant tumours of the pharynx in the child (*Rev. hebdomadaire de Laryng.*, 1914, I, p. 449).—**L. Jeanneret**.—Primary malignant tumours of the oropharynx are very rare in the child. The tonsils are the usual starting point, less frequently the soft palate, and rarest of all the pharyngeal walls. Incompletely developed sarcomata are the most frequent type. Alveolar sarcomata and rhabdomyo-sarcomata are rare. Carcinomata are very rare. All tumours of the oropharynx in the child have a very rapid course and an absolutely bad prognosis. When symptoms have appeared surgical interference is useless, as a rule, because it is too late. Jeanneret has collected fourteen cases from literature in patients aged from 3 months to 18 years, and two original cases, one of a carcinoma of the pharynx in a boy, aged 6 years, which invaded the naso-pharynx and soft palate, and the other of a congenital sarcoma of the pharynx in an infant of six weeks with metastasis in the lungs, intestine, liver, kidney, and muscles. The ætiology was obscure, as there was no heredity or history of trauma in pregnancy.

J. D. ROLLESTON.

Adenoids and appendicitis (*Thèses de Paris*, 1913–1914, No. 396).—**E. A. Leblau**.—A certain number of cases of adenoids develop symptoms of muco-membranous colitis or appendicitis. Careful intestinal examination should therefore be made, especially of the colon and appendix in every case of adenoids. The infection appears to originate in the naso-pharynx, and reaches the lymphoid tissue of the intestine either by the swallowing of muco-pus or by the blood-stream. Follicular colitis is then set up and finally the infection is localised in the closed follicles of the appendix. The thesis contains the histories of fifteen cases in patients aged from 3 to 21 years.

J. D. ROLLESTON.

The lingual tonsils in health and disease (*Journ. of Ophth. and Otolaryng.*, 1912, XVIII, p. 362).—**J. H. Johnson** suggests: (1) That the lingual tonsils are glandular organs and secrete lymphocytes; that they lubricate the surface, and while in a normal condition are important organs of protection. (2) That the simpler throat affections require the vital organs to be carefully guarded. (3) That of the extra-pulmonary causes of cough the glosso-epiglottic space is undoubtedly the most frequent, and unless that portion of the respiratory track be examined as it should be in every case of cough, serious errors in diagnosis must ensue. (4) That numerous reflexes result from diseased lingual tonsils and lingual varix, which are greatly helped or cured by proper treatment. (5) That the

lingual tonsils may become diseased or changed from organs of protection to organs of infection, and when they become such they should be removed.

MACLEOD YEARSLEY.

Hæmorrhage following tonsillectomy (*Boston Med. and Surg. Journ.*, 1914, CLXX, p. 525).—**F. E. Garland** and **D. C. Greene**.—This is more often venous than arterial. It may be described as an ooze, and may lead to death without any of the text-book symptoms of hæmorrhage. To prevent this careful inspection of the throat should be made at intervals after operation. A danger signal which occurs at the beginning of the bleeding is the formation of a clot in the fossa above the bleeding point. As soon as this occurs ether should be re-applied at once and the pillars sutured.

J. D. ROLLESTON.

Grass-stalk in bronchus; transverse tracheotomy and bronchoscopy (*Lyon Méd.*, 1914, CXXII, p. 681).—**M. Sargnon** showed a boy, aged 5½ years, at the Soc. des Sci. méd., who had suffered from attacks of dyspnœa and cough for five months. There was a history of having "swallowed" a tuft of dry grass. The case was interesting owing to the difficulty of diagnosis. The pulmonary signs were uncertain and the X-rays only showed inflammatory lesions round the foreign body, which was itself invisible. Remarkable also was the extreme tolerance of the lung for a foreign body which was continually pricking it and was probably causing the attacks of coughing. It was curious that it had not been expelled, but bronchoscopy explained the reason by showing a constriction due to a swelling produced by the foreign body. Extraction was difficult owing to the brittle nature of the grass. Tracheotomy proved very useful. This operation performed under novocaine and with transverse incision is free from danger. Five bronchoscopies under general intermittent anæsthesia were well borne. The longest examination lasted an hour. Usually children's bronchoscopes after Brunings' model are furnished with too small lateral respiratory orifices causing partial asphyxia during the operation, which is particularly annoying when a general anæsthetic has to be used. The author has increased the size and number of these orifices, and the child was able to breath more satisfactorily.

VINCENT DICKINSON.

Reviews.

THE DISEASES OF CHILDREN. Edited by Dr. M. PFAUNDLER and Dr. A. SCHLOSSMANN. English Translation edited by Dr. H. L. K. SHAW and LINNEUS LA FÉTRA. Vol. VI. By Dr. ARTHUR J. BEDELL. Pp. xv + 430, with 130 illustrations, 9 full-page insertions in colour and black, and 18 coloured text illustrations. Philadelphia and London: J. B. Lippincott Company. Price 21s. net.

A SPECIAL character is imparted to the affections of the ear by the many peculiarities of childhood, giving rise to pathological pictures particularly their own. Hitherto no special work has been published upon pædiatric otology, a subject usually dismissed somewhat briefly in text-books upon diseases of the ear. Such a volume has been long overdue, and the description

which Dr. Arthur Bedell has given to the specialist in the diseases of children should therefore be most welcome did it come up to the expectations offered by its size and title.

The anatomy of the ear is first dealt with, the description being lucid and much assisted by good illustrations, some of them in colour. This is followed by a section on physiology, less adequate, since Helmholtz's theory is practically the only one discussed, and very superficially at that. The part dealing with the physiology of the static labyrinth also might have received better attention. Clinical examination follows, but in this part the author either does not seem to realise that he is dealing with infants and children or has failed to meet with difficulties in his aural pædiatric practice. It is scarcely wise, for example, to advocate the Valsalva method of inflation for children. Much of the section on functional hearing testing is excellent, but here again the author does not appear to appreciate the many practical difficulties that arise in testing the hearing of children; indeed, the section is more suited for a text-book of adult otology. The same applies to the description of the examination of the vestibular apparatus.

The diseases which affect the auditory apparatus are then taken in order, beginning with those of the external ear. In dealing with rupture of the membrana tympani and its effect upon the hearing, the question of concomitant concussion is not given sufficient prominence. The section on acute inflammation of the middle ear in infants and young children is good. Over two pages are devoted to the artificial drum, an appliance not often judicious for children. The author states that he is "in the habit of using soft rubber caps which the patient can himself insert or remove with a forceps," a remark which, however useful such a method may be in some adult cases, does not seem very apposite or wise in regard to children. Otosclerosis is well handled, and from the description given it may be gathered that the author concludes that a considerable number of cases begin in childhood.

The passages upon congenital deafness do not convey very clear ideas upon the subject, and, judging from his remarks, it is doubtful whether the author has had any great experience in deaf-mutism, so-called. No mention is made of the more important recent work on this highly important subject, and it is surprising to find no reference to Kerr Love's monumental and valuable researches. England is described as being "the country which takes the best care of its deaf-mute children."

The book, which is well printed and well illustrated, is excellent in many respects, but it gives the impression throughout of being rather a general otological text-book with special reference to ear disease in children than one the chief object of which is pædiatric otology. It therefore falls short of the promise which it gives of supplying a special want. M. Y.

LE TRAITEMENT DES STÉNOSES AIGÜES DU LARYNX. By Dr. GUILLERMO ZORRAGUIN. Paris: Vigo Frères, 1914. Pp. 45, with 7 figures. Price 2 francs.

IN this small but important work the author studies intubation and tracheotomy, and shows that both are serious procedures, pursuing his study with fresh clinical and experimental arguments. He suggests the problem: To re-establish in stenoses of the larynx normal conditions of respiration, to set up simultaneously with inspiration a positive intrapulmonary air tension to expiration by safeguarding the lungs, heart, arterial tension, etc. To preserve the primitive action of the glottis in

respiration, to restore expectoration, cough, and voice, to isolate initial lesions and limit laryngeal exercises. He solves the problem of tracheotomy with a tracheal valve. M. Y.

APPENDICITIS: A PLEA FOR IMMEDIATE OPERATION. By EDMUND OWEN, F.R.C.S., Surgeon to the French Hospital; Consulting Surgeon to St. Mary's Hospital and to the Hospital for Sick Children. 1914. Bristol: John Wright & Sons, Ltd. Pp. 214. Price 3s. 6d. net.

IN the early part of the year 1913 Mr. Edmund Owen read a paper before the Medical Society of London advocating immediate operation in case of appendicitis as soon as a diagnosis had been made, and in the discussion which followed all the speakers held the same view. The present book is an elaboration of Mr. Owen's original paper, and although he does not claim to have written a complete essay on appendicitis, he has, nevertheless, dealt with the subject in a full and very able manner. There appears to be still two schools of thought as to the treatment of the disease in question, the one favouring, in apparently mild cases, a conservative and expectant plan, and the other insisting upon operation with as little delay as possible when once the condition has been recognised. The author is well known as a champion of operative measures in these cases, and he here sets forth his views in a characteristically forcible way, laying stress on the dangers of procrastination and the hidden possibilities which may attend a so-called mild case of the disease. Especially does he emphasize the danger of appendicitis in children: in them the disease may go unsuspected, and on account of their less resistance it is liable to run a severe course. In children, therefore, early operation is even more necessary than in adults. Mr. Owen maintains that appendicitis ought to be diagnosed and operated upon before the so-called classical symptoms of the disease have had time to arise, as they are really the signs of a local peritonitis, and to wait for their appearance before operating is merely to court disaster. These views are reiterated throughout the book, and the author will not fail in his endeavour from want of rubbing it into the reader. No other term will adequately express his method.

In addition to his special plea for immediate surgical proceedings, the writer also deals with the wider aspects of appendicitis, and in addition to its pathology and diagnosis he describes in detail the operative measures for aseptic and septic cases. The after-results of operation and the complications of appendicitis are also touched upon. In speaking of the causation of the disease, an interesting theory is advanced that it may possibly be found in the germ-laden road dust which is stirred up by motor traffic.

Mr. Owen's book should be read at least once by every medical man who has any doubt as to what course to pursue in cases of appendicitis, as it embodies the modern views on the subject, and cannot fail to afford much food for reflection. T. R. W.

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Original Articles.

THE EARLY DEVELOPMENT OF MYOSITIS OSSIFICANS
PROGRESSIVA MULTIPLEX, ILLUSTRATED BY AN
APPARENTLY CONGENITAL OR ALMOST CON-
GENITAL CASE.

By F. PARKES WEBER, M.D., F.R.C.P.,

AND

ALWYNE COMPTON, F.R.C.S.

THE patient, Mary T—, was shown by one of us on March the 28th, 1913, at the Royal Society of Medicine (Section for the Study of Disease in Children) on account of the peculiarity in her thumbs and great toes, and the presence of a bony spicule on the left side of her neck.* She was then a healthy-looking baby aged $7\frac{1}{2}$ months. At the time, careful examination by palpation, ordinary inspection, and Röntgen rays (Dr. N. S. Finzi), showed that the deformities in the feet and hands were quite symmetrical. The great toes (see Figs. 1 and 2) were everted ("hallux valgus") and overlapped by the other toes; they were abnormally short and altogether small, though the first metatarsal bones were of about average size. The

* 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, 1913, vi, pp. 160-163.

child's thumbs were turned inwards across the palms and were abnormally short and slender, the shortness being especially well marked in the first metacarpal bones (see Fig. 3). There was con-

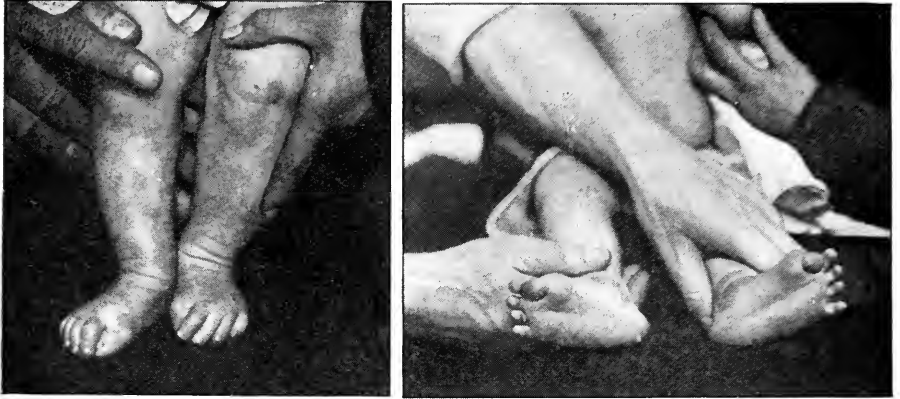


FIG. 1.—Photographs of the child's feet, showing position of the great toes.

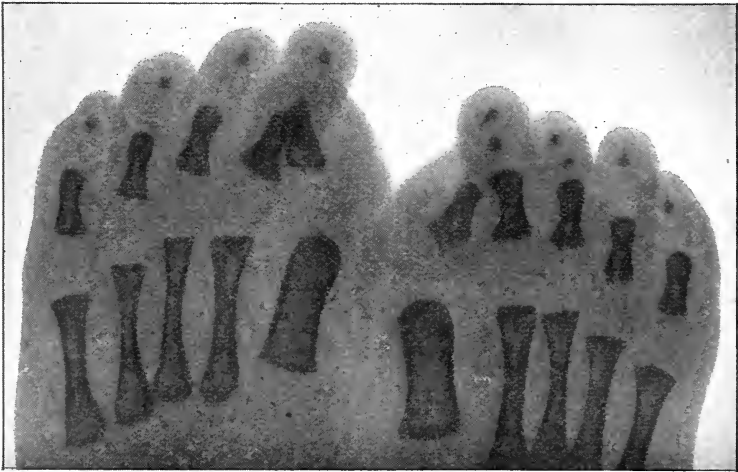


FIG. 2.—Skiagram of the child's feet (hallux valgus).

genital ankylosis (will become synostosis) or non-development, of the interphalangeal joint of each great toe and each thumb. In addition to this microdactyly of the great toes and thumbs, there was an abnormal bony projection on the left side of the neck, which might have been mistaken for a cervical rib, but Röntgen ray examination

(see Fig. 4) showed the outgrowth to be a thin spicule of bone

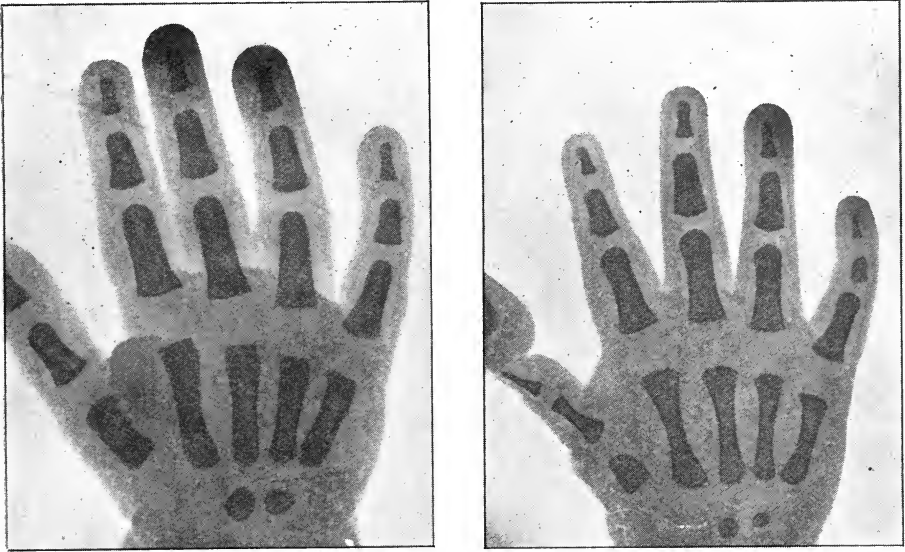


FIG. 3.—On the right is a skiagram of one of the patient's hands, showing the smallness of the metacarpal bone of the thumb; the thumb is being forcibly held in position. On the left is a skiagram of the normal hand of a male child, aged 10 months.



FIG. 4.—Skiagram of the child's cervical region from the back, showing the bony outgrowth from the left clavicle.

attached to the back of the middle of the left clavicle. This spicule, which reminded one of the styloid process of the temporal bones at the base of the skull, projected about half an inch upwards, appa-

rently at the outer border of the clavicular origin of the sterno-cleido-mastoid muscle, and its upper end could be felt almost immediately below the skin. Apart from these slight deformities, the patient seemed well formed, and was the only child of healthy parents, both young. There was no history of any similar malformation in any other members of either the mother's or the father's family, nor was there any definite history of "maternal impressions."

The child apparently continued to enjoy good health and nothing

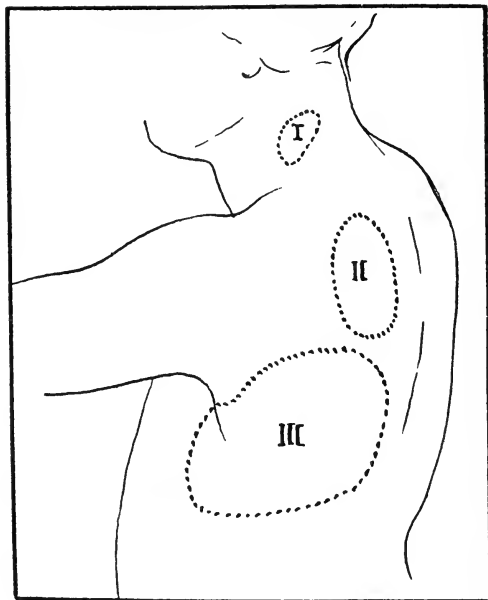


FIG. 5.—To show development of the swellings between March the 15th and March the 22nd, 1914. No. I appeared in the middle of March, a few days after a fall upon the left shoulder. No. II appeared on March the 22nd and was almost immediately followed by No. III. By that time No I had almost completely disappeared.

further abnormal was noticed until March, 1914, when a series of diffuse, ill-defined, hard, painless (and not tender) swellings began to develop under the skin of various parts of the trunk (see Figs. 5 and 6). These swellings involved the muscles and probably the subcutaneous tissue, the skin could be moved freely over them, and they were not accompanied by fever or constitutional disturbance. The first one to attract attention was situated in the left posterior triangle of the neck (Fig. 5, No. I). It appeared about the middle of March, a few days after the child had had a slight fall on her left shoulder. This swelling soon began to diminish, but on March the 22nd another swelling

(Fig. 5, No. II), of the same character, was observed over the upper left scapular region (Fig. 5 and Fig. 6, No. II), and was almost immediately followed by a third swelling (Fig. 5 and Fig. 6, No. III) over the left lower part of the thorax. Before these last two swellings on the left side had disappeared analogous swellings formed on the right side. First of all, on April the 4th, one was noticed on the right side of the neck (Fig. 6, No. IV), and, a few days later, others appeared lower down on the right side (Fig. 6, No. V and No. VI) corresponding to the second and third on the left side. The lowest

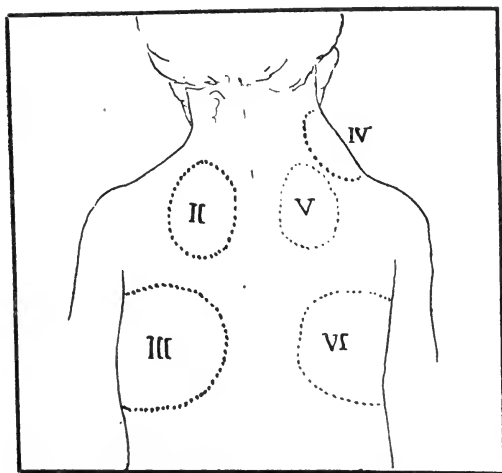


FIG. 6.—To show further development of the swellings. On April the 4th, 1914, while swellings No. II and No. III were still present, No. IV appeared and was followed, a few days later, by No. V and No. VI, corresponding on the right side to No. II and No. III on the left side.

of these swellings occupied the lowest scapular, infra-scapular, and lateral regions of the thorax; the superficial veins over it appeared to be slightly dilated. A slight enlargement of superficial veins was also noticed over most of the other "lumps" or swellings of this class.

Though Dr. J. Metcalfe, by Röntgen-ray examination on April the 20th, 1914, failed to find any evidence of calcification or abnormal ossification at the sites of any of these swellings, it seemed clear to us, owing to a publication by Dr. A. E. Garrod,* that our case was an early one of myositis ossificans progressiva. In his paper Garrod described the case of a boy in whom, from the age of five months

* "The Initial Stage of Myositis ossificans progressiva," 'St. Bartholomew's Hospital Reports,' London, 1907, xliii, p. 43.

onwards, lumps appeared on the head (occipital region) and trunk, which increased in size for a time and then gradually disappeared, leaving no obvious traces behind them. The swellings were most numerous on the boy's back, but two were situated on the front of the chest, apparently in the outer parts of the pectoral muscles. Garrod writes: "When the patient left the hospital no induration was felt in any situation in which the swellings had formerly been, although one can hardly doubt that some lesions must have remained. Nowhere was there anything to suggest that an abnormal formation of bone had taken place. . . . His rectal temperature never rose above 100° F., but evening rises to 99° F. were frequently recorded. The appearance of a fresh swelling, even though a large one, was not attended by any marked constitutional disturbance. Pain, if present, was evidently slight, and tenderness of the swellings was never elicited." No Röntgen photographs were made in that case, but in the following year information received by Dr. Garrod left no doubt that ossification was occurring in the muscles, and that the case was a very decided one of myositis ossificans progressiva. Garrod refers to other cases of the disease, in the earliest stages of which transient swellings were said to have developed and to have disappeared, leaving no obvious traces behind them. He kindly informs me that Dr. John Thomson, who confirmed the diagnosis in his case, had had the opportunity of watching the progress from an early stage in a similar case. He particularly cites a description, by Salvetti,* of the case of a child, aged 4 years. In that case, "although obvious bony deposits were already present in some of the swellings, and the presence of such was verified by microscopic examination of a portion removed during life, it is mentioned that in January, 1903, some swellings, which had been present upon the head in the summer of 1902, had completely disappeared without leaving any trace behind them."

In our own case the diagnosis of myositis ossificans progressiva was strongly confirmed by the presence of the microdactyly of the great toes and the thumbs, which we have described and figured (see above). The bony spicule on the right side of the neck (possibly connected with the outer border of the clavicular origin of the sterno-cleido-mastoid muscle), which was already present when the child first came under observation, suggests that in regard to its commencement the disease was in our case congenital or almost congenital. Garrod quotes H. Lorenz's description of the microdactyly of the great toes in cases of myositis ossificans progressiva

* 'Arch. f. Kinderheilk.,' 1904, xxxix, p. 317.

as follows: "This deformity consists in a change in both great toes, which usually takes the form of a hallux valgus with retardation of development, the great toes coming to lie beneath the second toes. The shortening is usually explained by an absence of the first phalanx; but this explanation does not hold good in every case, for recently von Zoëge-Manteuffel has demonstrated on the skeleton a synostosis of the shortened phalanges of the toes, which could, in his opinion, be easily mistaken for absence of the first phalanx, which has so often been described previously. A similar condition had been described a short time before by Fürstner."* In our present case the condition of the great toes corresponds exactly to Zoëge-Manteuffel's description. The corresponding deformity in the thumbs, also noted in our case, appears to be by no means invariably present in cases of myositis ossificans progressiva.

In a single case of myositis ossificans (described long ago by the surgeon Cæsar Henry Hawkins) antisyphilitic treatment is said to have given a good result. In our present case the blood-serum (May the 3rd, 1914) gave a negative Wassermann reaction for syphilis. Examination of the child's blood (Dr. Sons, April the 23rd, 1914) gave the following results: Red cells, 6,160,000 to the cubic millimetre of blood; white cells, 20,200 (after the midday meal); hæmoglobin (Sahli's method), 60 per cent. Differential count of white cells; neutrophile polymorphonuclears, 65 per cent.; eosinophile polymorphonuclears, 0.5 per cent.; basophile polymorphonuclears, 0; lymphocytes, 31.5 per cent.; transitionals, 3.0 per cent. The urine showed nothing special. By ophthalmoscopic examination of the child's eyes (April the 27th, 1914) Dr. C. Markus found nothing abnormal. The lower jaw was not particularly small, as it has been found to be in some cases of myositis ossificans progressiva.

On April the 23rd, 1914, for biopsy purposes, Mr. A. Compton excised a small piece of the right latissimus dorsi muscle (over the lower part of the scapula, where it was obviously swollen), and likewise a piece of the subcutaneous fat covering it. The affected muscle was hard, swollen, and relatively pale, and the fascial covering was of a dull white colour. The subcutaneous fat over it also seemed swollen. He also excised a small piece of the right vastus externus muscle and a small piece of the subcutaneous fat over it, as specimens of the patient's clinically normal tissues to compare with the affected tissues. Of these four pieces the micro-

* See H. Lorenz, 'Die Muskelerkrankungen,' Theil 1, Wien, 1898, p. 284.

scopical sections of the latissimus dorsi muscle (which was macroscopically obviously diseased) were the only ones which showed anything abnormal. The accompanying illustrations (Figs. 7, 8 and 9) are from microscopical drawings by Mr. A. Compton.



FIG. 7.—Microscopic section of right latissimus dorsi muscle, showing the invasion of the muscle by newly-formed fibro-cellular connective tissue. The muscle-fibres are seen best preserved in the lower part of the figure.

The chief histological change shown in the diseased muscle, a change well illustrated by Mr. Compton's drawings, is the invasion of the striped muscle tissue and the normal connective tissue belonging to it, by a newly-formed fibro-cellular connective tissue, which in its features resembles rather a fibromatous hyperplasia than a product of ordinary inflammation. The muscle fibres are, however, likewise

undergoing degenerative changes, tending to split up longitudinally into fibrillæ and, in parts, to atrophy. No micro-organisms, special eosinophilic cells (local eosinophilia), or commencing calcification

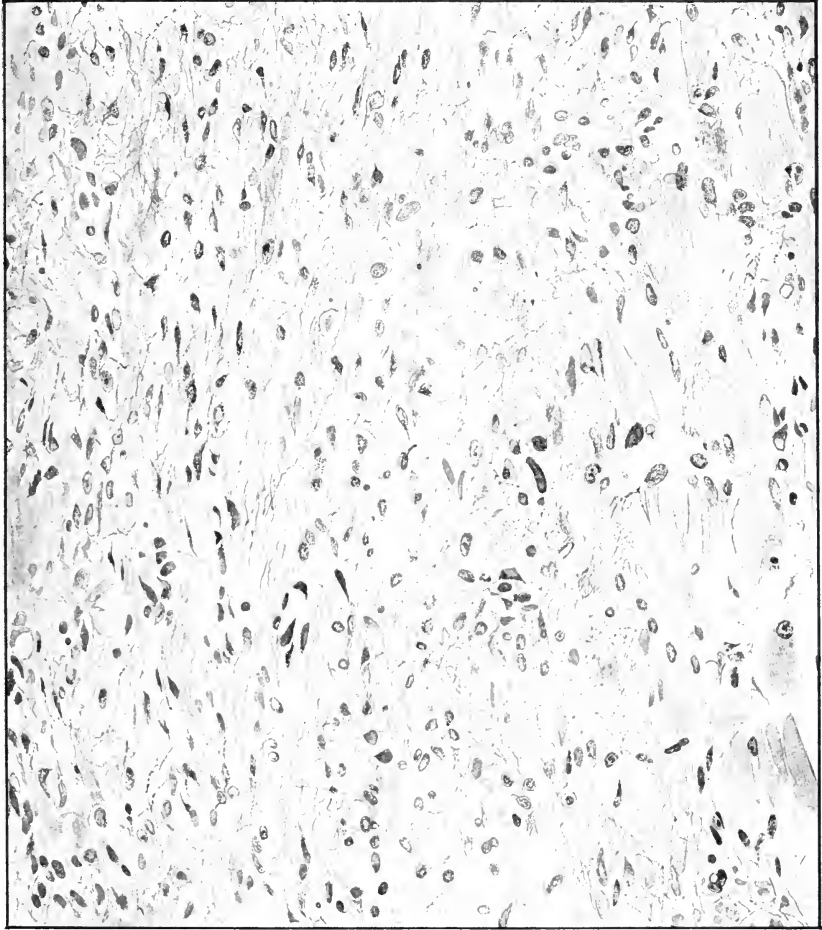


FIG. 8.—Right latissimus dorsi muscle. Higher magnification.

was discovered in the sections. The correctness of the term "myositis" in regard to the present disease is very doubtful, and Gobo (of Japan) has (1913) suggested the substitution of the name "Hyperplasia fascialis ossificans progressiva."

The later history of our case has abundantly confirmed the early

diagnosis of myositis ossificans progressiva, though the rare disease in question is decidedly still rarer in females than in males.

In May, 1914, a distinct bony formation could be felt about the posterior axillary fold on the left side, probably in the left latissimus dorsi muscle. At the same time another of the transient swellings

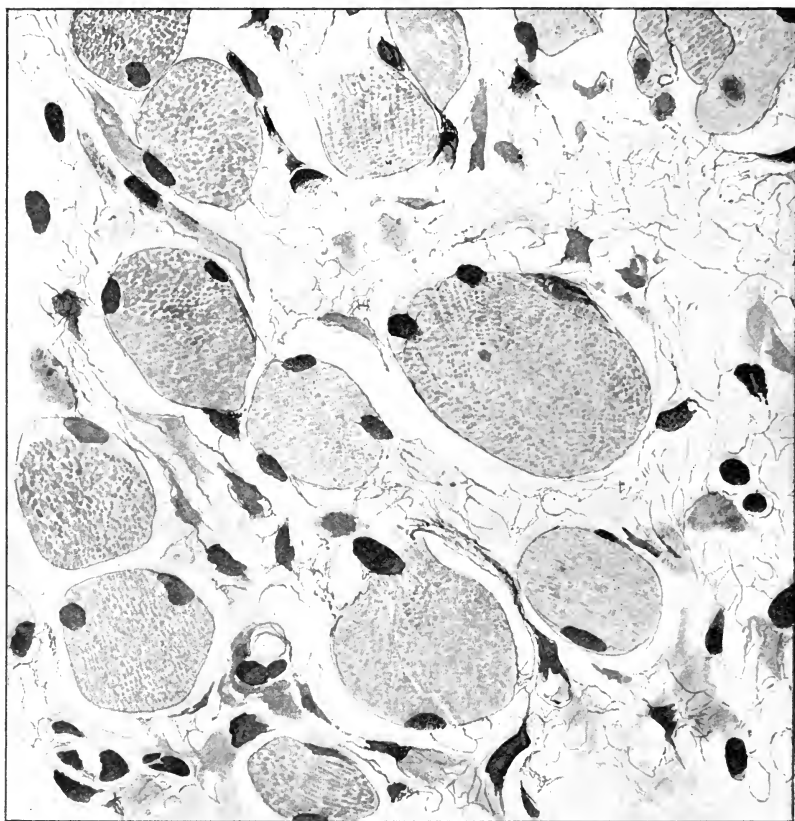


FIG. 9.—Right latissimus dorsi muscle. High magnification. Showing the splitting up of the muscle-fibres into fibrillæ.

occurred, namely, on this occasion in the region of the right pectoralis major muscle. Röntgen skiagrams kindly taken by Dr. J. Metcalfe on June the 4th showed marked shadowing, corresponding to the bone-formation in the left axillary fold. In June hard swellings developed in the right biceps muscle and over the lower part of the right scapula, and also at a corresponding position on the left side of the thorax. Treatment by subcutaneous injections of Merck's

fibrolysin was tried in June, but was soon discontinued, as it seemed to be doing no good. In August the child appeared well in her general health, but the previously-mentioned swelling in the right biceps muscle was very firm, so that the right elbow-joint was fixed at nearly a right angle. The lower end of the right scapula was bound by a bony, or partially bony, band either to the chest-wall or to the vertebral column. In the right thigh an irregular bony plate had developed over the vastus externus muscle at the site of the biopsy incision (of April the 23rd, 1914). Similarly, a bony deposit could be felt in the deltoid muscle area of the left arm, where the injections of fibrolysin had been made. Lastly, the whole left rectus abdominis muscle, from the pubes to the chest-wall, felt as if it had undergone a fibrous thickening, but this thickening has now entirely disappeared. In September and October an apparently bony lump on the occiput at the insertion of the trapezius muscle gradually formed, and, for the third time, a swelling (of tough, leathery elastic consistence, like the preceding ones) developed on the back, just below the angle of the right scapula. The child now looks well nourished and happy, but is very stiff in the movements of her neck and back, the power of extending the neck becoming more and more limited. The limitation in all the movements of the head gives rise to a compensatory increase in the movements of the eyeballs, very characteristic of children suffering from any kind of chronic stiffness in the neck. There seems now also to be some osseous infiltration in both anterior and posterior axillary folds on both sides, limiting abduction of both arms.

The case is a striking example of the commencement of myositis ossificans progressiva in a baby, the first signs of the disease in the present patient having been almost, if not quite, congenital. The early diagnosis was due to the appearance of diffuse, hard, painless, transient lumps or swellings at various parts of the patient's body, similar in character to those so admirably described by A. E. Garrod in the paper above referred to. The effect of traumatism as an occasional exciting cause of the local manifestations of the disease is illustrated in the present case by the occurrence of the first "lump" (*i.e.* the swelling on the left side of the neck) a few days after a slight fall on the left shoulder, and is still further illustrated by the development of bony lumps at the site of one of the biopsy incisions and at the site of the fibrolysin injections. The disease appears in this case, as in other cases, to be due to a congenital, but not inherited, tendency to the formation of fibrous tissue and bone in striped muscles (that is to say, in the connective tissue

normally belonging to the muscles), especially at the site of, and as a result of, traumata (even slight traumata) of various kinds. The present case also shows that the growth of the newly formed bone in myositis ossificans progressiva does not necessarily proceed from the periosteum, as it seems to do in cases of ordinary traumatic localised myositis ossificans ("rider's bone," etc.). The bony lump at the site of the incision into the vastus externus muscle of the right thigh has, indeed, developed quite far from any periosteum. How little an ordinary inflammation of muscle (*myositis* in the strict sense of the word) has to do with the disease is shown in the present case by the results of microscopical examination of the diseased muscle before any local bone-formation had occurred, and likewise by the practical absence of fever or constitutional disturbance during the exacerbations. There is, indeed, something to be said in favour of such a term as "Hyperplasia fascialis ossificans progressiva," already referred to, but, on the other hand, it is inconvenient and unnecessary to change the old-established names of diseases for the sake of pathological theories. The disease, which advances by repeated fits and starts, appears histologically to be an *ossifying hyperplasia of the fasciæ and connective tissue of the striped muscles, especially the muscles of the trunk*. In the early stages of the disease, however, the muscular swellings constituting the exacerbations sometimes subside without the immediate occurrence of any local ossification at the site of the swellings.

NERVOUS CRETINISM.*

By Major R. McCARRISON, I.M.S., M.D., F.R.C.P.

In a paper entitled "Observations on Endemic Cretinism in the Chitral and Gilgit Valley," which I read before the Medical Section of this Society in November, 1908, I drew attention to the frequent association of a definite train of nervous symptoms with cretinism. These symptoms were present in seventy-one cases among a total of 203 cretins, and appeared to me to constitute a definite type of disease to which I applied the term "nervous cretinism." I was well aware then, as I am now, of the objections to the use of this term, but in distinguishing these cases by a distinctive title I had hoped to focus

* A paper communicated to the Section of the Study of Disease in Children of the Royal Society of Medicine on July the 22nd, 1914.

attention on a condition, the dependence of which on congenital hypothyroidism had, so far as I am aware, previously escaped recognition. My object in making this further communication is to point out the comparative frequency with which this type of cretinism is to be met with, and the necessity for its early recognition; and further, to insist on the fact that the nervous, in common with the cretinoid, symptoms which characterise it are due to the thyro-parathyroid deficiency.

SYMPTOMS OF THE DISEASE.

The symptoms of this type of cretinism were fully discussed in my original paper (11) and are, in brief, a combination of congenital myxœdema (cretinism) with congenital cerebral diplegia, in all their varying grades. In one case the myxœdematous signs may predominate, in another the diplegic. As a rule, it is easy to detect the well-known signs of myxœdema, but there are rare instances in which these signs are almost wholly wanting. The dolichocephalous skull and the facial appearances may afford important indications of the nature of the case, since myxœdematous signs are often to be observed in the face and head when they are absent from other parts of the body. Where the nervous symptoms are predominant, there is often a lesser degree of stunting of growth than is the rule in the purely myxœdematous type of the disease. The signs of derangement of the central nervous system may vary from the slightest degrees of paraplegia to the most intense grades of spasticity, athetosis, fits, and idiocy. Nystagmus, which is rare in the purely myxœdematous forms, may be present in these cases, and squint is common. Such extreme examples of this type of cretinism may be indistinguishable from cases of "cerebral diplegia," and it is only by the recognition of the scanty myxœdematous signs of the malady, and by the application of the therapeutic test of thyroid medication, that their true nature can be appreciated. Sufferers from the lesser degrees of the affection are backward in their physical and mental development, slightly cretinoid in appearance, slow to cut their teeth, to talk or to walk, paraplegic, afflicted with stubborn constipation, or it may be with enuresis. The constipation may be due in part to the functional inefficiency of the nervous mechanism which controls peristalsis, but is in part due also to the lack of thyroidal activity, which is so important an influence in stimulating the secretion of the succus entericus (9).

PREVALENCE OF THE DISEASE.

Turning now to the question of the frequency with which "nervous cretinism" is met with, my original account of the condition in 1908 (11) will make it clear that it is common in goitrous districts. Chagas (2), when he published his descriptions of the so-called "parasitic thyroiditis" of Brazil in 1911, referred to the common occurrence of cases of "cerebral diplegia" of all degrees of severity in children who had suffered from this thyroiditis. In referring to what he has described as the "chronic forms" of this affection, Chagas differentiated a "nervous" as well as a "myxœdematous" and other types. His description of the first and the appearance of his cases as seen in photographs resemble mine very closely. Now the types of cretinism met with in Europe and in India are almost invariably congenital and are not the result of a specific thyroiditis induced by a trypanosoma infection, and I find it impossible to believe that a trypanosoma infection is in itself sufficient to account for the cases recorded in Brazil. I have elsewhere (12) suggested that the so-called "chronic types" of the Brazilian disease may be forms of goitrous and cretinous degeneration, upon which is superimposed a trypanosoma infection. In India all varieties of cretinous disease are constantly met with in localities where such protozoal affections as kala-azar and malaria prevail with intensity, and I venture to think that it would be as reasonable to attribute the cretinism of these localities to infections by *Leishmania* or *Hæmamoeba malariae* as to hold that the cretinism of Brazil is the result of infection by *Trypanosoma cruzi*.

But the fallacy of such reasoning is exposed by the fact that all types of cretinous disease are met with in Europe and of India where parasitic thyroiditis is as unknown as are kala-azar and malaria. It is true that in localities where such protozoal infections are endemic, cases of goitrous and cretinous degeneration are often more common or more severe in type, and for the reason that almost all acute infections have a definite action on the thyroid gland. These infections, however, serve only to accentuate the congenital thyroidal inadequacy; they are not the primary cause. So important was the influence of malaria on the production of these types of diseases regarded to be by such a competent observer as Macnamara (10), that over thirty years ago he attributed goitre and its sequelæ to the miasma of malaria. Chagas does not claim that the chronic forms of the malady bearing his name are identical with the goitrous and cretinous degenerations of Europe, but I venture

to think that he has not excluded, in a manner which leaves no room for doubt, the possibility that the form of trypanosomiasis which he has described may be an infection superimposed upon "endemic goitre," and not, as he considers the infection to be, the veritable cause of this malady in Brazil.

Since the publication of my original account of nervous cretinism a considerable number of cases of the disease have been recorded in England. In the winter of 1908, I saw, with Dr. Hawthorne, a case at the Royal Waterloo Hospital which responded readily to thyroid medication. Dr. Hawthorne has since informed me that he has met with a number of others, and obtained a considerable measure of success in their treatment by thyroid extract. In March, 1913, Dr. Langmead showed a case before this section, and recorded the markedly beneficial results of thyroid treatment (8). In December of the same year, Dr. Crookshank showed another case before this section which was one of six or seven under his care (3). He also was able to record the fact that the patient, who "could hardly walk or talk seven months ago," was, as the result of thyroid medication, now able "to walk and talk well."

Typical cretinism, as described in the text-books of medicine, may be a comparatively rare affection in England, but hypothyroidism in childhood is not rare, and types of infantile palsy of all grades of severity are amongst the manifestations of this state.

PROOF THAT THE NERVOUS SYMPTOMS OF CRETINISM ARE DUE TO THYRO-PARATHYROID DEFECT.

The markedly beneficial results of treatment by thyroid medication to which some reference has been made above is, I believe, a clear indication that cases of this kind, which are not due to other obvious cases of cerebral diplegia, are often the result of thyro-parathyroid disease. Further evidence in support of this conclusion is afforded by the changes which I found in the thyroid gland in a typical case. In this patient the nervous symptoms had predominated, the cretinoid signs were almost wholly wanting, yet the thyroid was found to be practically colloidless and to be invaded by dense bands of fibrous tissue; the parathyroid glands could not be found. It is certain, and the recent experimental work of Tatum (15) in very young rabbits has emphasised the fact, that "athyroidism is responsible for grave degenerative changes in practically all organs and tissues of the body, and many of the symptoms of cretinism have an anatomic basis in organic cellular changes." The experi-

mental work of Edmunds also has an important bearing in this connection (4). He has shown that the changes in the central nervous system which result in animals as a consequence of thyroidectomy consist in "chromatolysis of the cells, large and small, swellings of the cell bodies, swelling of the nuclei, extension of the nucleus, and total destruction of the cell body, leaving only a practically free nucleus." These changes, which cannot be attributed to microbic or protozoal agencies, are, I believe, sufficient to account for the symptoms seen in "nervous" cretinism.

It is clear, then, that these being the effects of athyroidism on the central nervous system, cases of congenital thyroid defect should be recognised, and treatment undertaken, at the earliest possible moment before permanent damage has been done to the neurones. The amount of benefit to be derived from thyroid medication will be dependent on the duration of the hypothyroidism, or of the athyroidism prior to the commencement of treatment.

MODES OF ORIGIN OF THE ATHYROIDISM OR HYPOTHYROIDISM.

In my original account of these cases I expressed the belief, as the result of my clinical observations, that defective thyroid function in the mother is the essential factor in the production of cretinism in the child, and that the defect in cretinism is one of the whole thyroid mechanism of the parathyroids as well as of the thyroid gland. I was then of opinion that the diversity of symptoms met with in cretinism is due to the extent to which the defect bears on the whole or part of that mechanism. Experimental researches on rats, which I have lately published (13), confirm this opinion. A point of interest in connection with the nervous type of the malady is the determination of the part played by parathyroid deficiency on its production. I have expressed the view that this part is possibly a considerable one (11). But though I have lately succeeded (13) in producing definite congenital parathyroid lesions in 32 per cent. of the offspring of female rats fed during gestation on intestinal anaerobes, or on the faecal filtrate from goitrous persons, and also in producing congenital cretinism in 47 per cent. of cases, these young rats did not live long enough to develop symptoms which could be referred to the parathyroid glands, and, consequently, I have been unable to provide definite experimental evidence in favour of this hypothesis. While I adhere to the opinion that parathyroid lesions play a part in development of the nervous symptoms associated with some cases of hypothyroidism, it appears to me that the diverse

symptoms observed in animals deprived of the whole or part of their thyroid mechanisms (16) (6) (5), and in cretins, may, in part at least, be due to the diverse nature of the toxic products of their own intestinal flora, or their own metabolism. The harmful action of such toxins on the tissues of the body may be rendered possible by states of thyroid and of parathyroid deficiency. It is conceivable that a definite toxin may give rise to changes which occur in the central nervous system, and that another may be responsible for the changes characteristic of myxœdema (14).

The point of practical importance, however, is recognition of the fact that certain cases of cerebral diplegia are associated with congenital disease of the thyro-parathyroid mechanism, and that these cases can be cured or greatly relieved by the provision of thyroid substance.

PREVENTION AND TREATMENT.

Since defective thyroid function in the mother is the essential factor in the production of cretinism in the child, it becomes necessary to protect the child during the period of gestation from all influence which may throw an added strain on her thyroid mechanism. Of special importance in this connection are the effects of infectious diseases, of helminthiasis, of intestinal toxæmia, and of fright and mental strain. All these I believe to be important determining factors in the production of cretinism in the child, and it is essential that they should be rigidly guarded against (11).

In the care of infants who may be the subjects of congenital hypothyroidism, the questions of their food and of their freedom from intestinal disorders are to my mind of great importance. I noted during my study of this disease in Gilgit the fact, to which I then attributed little significance, that in a small proportion of all cases in my series a definite history of defective food supply was obtained and that these were amongst the very worst cases of the disease I had met with. They were those in which, the mother's milk not being sufficient, artificial feeding had to be resorted to. We now know that human milk contains substances, probably the products of the ductless glands, which are requisite for the child's proper development. This being the case, we must take the greatest care in the artificial feeding of infants to provide their milk in a form which is not defective in these important ingredients. It is questionable whether the milk of a cow is a sufficient substitute in this respect for human milk. Certain it is that the process of boiling

cow's milk destroys many of its most important constituents, and children, though abundantly fed, are thus often deprived of essential substances upon which their physical and mental development largely depend. A consideration of recent works on the subject of food vitamins (7) must open our eyes to the great importance of providing artificially fed children with milk in a form which is not wanting in these essential substances, whose nature is probably closely allied to the products of the thyroid and other glands of internal secretion. It is possible that food deficient in these requisites may lead to a drain of vitamins from such tissues as the central nervous system, and thus turn the scale in favour of the development of the nervous symptoms which are present in so many cases of congenital hypothyroidism. It is rare that cases of this nature are detected in breast-fed infants till after the cessation of lactation, or till after the lapse of a period when breast-feeding should have ceased.

In connection with the important subject of relationship of intestinal disorders to the thyroid gland, I shall refer only to the influence which is exercised on this organ by intestinal parasites. Dr. S. Phillips Bedson (1), in an instructive paper published in the 'Annales de l'Institut Pasteur' of Paris in August of last year, pointed out that congestion, desquamation of the vesicular epithelium, and pronounced invasion of the thyroid gland by fibrous tissue, follow as a consequence of the subcutaneous injection into guinea-pigs, over a period of from three to five weeks, of extracts prepared from the bodies of intestinal worms. It is clear that changes such as these must give rise to impairment of the organ's function. Careful search should, therefore, be made in the stools in all cases where defective thyroidal activity is suspected for the eggs of parasites, and where these are found anthelmintic treatment should be combined with the thyroid medication.

The important influence which, as my experiments have shown, is exercised on the thyro-parathyroid mechanism by certain intestinal anaerobes (13) makes it necessary to restrain the growth of such organisms in the intestinal tract in cases of thyroidal disease. The administration of the *Bacillus lacticus bulgaricus* or of potent intestinal antiseptics, and colon irrigations with antiseptic fluids, such as 1 per cent. ichthyol solution, are, therefore, methods of treatment to be recommended in such cases.

It is my hope that by again directing attention to the part played by thyro-parathyroid defects in the production of a definite type of congenital palsy cases dependent on such defects may be earlier

and more widely recognised and treatment applied along the lines suggested by the nature of the underlying lesion.

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Abstracts from Current Literature.

Medicine.

Recurrent multiple neuritis in a child (*Med. Record*,’ 1914, LXXXV, p. 1031).—M. A. Rabinowitz records a case in a girl who had the first attack at 9 and the second at 12 years. On both occasions the attack started with weakness in both fingers and hands, which was rapidly followed by a similar condition of both feet. There was no constitutional disturbance. Perfect recovery took place within a year after the first attack. A year after the onset of the second attack there was almost complete recovery. No cause could be assigned for the paralysis, such as alcohol, anæmia or diphtheria.

J. D. ROLLESTON.

Spina gliosis occurring in three members of the same family suggesting a familial type (*Am. Journ. Med. Sci.*,’ 1913, CXLVI, p. 386).—G. E. Price describes a condition in two males, aged 13 and 22 years, and one female, aged 24 years. In the latter a small sore appeared first on the right great toe at the age of 8, healed rapidly after the discharge of bone, and was followed two years later by a similar ulcer on the second finger of the right hand. There was total or partial amputation of the distal phalanges of the affected fingers, the extremities were clubbed. The

nail was thickened and had marked transverse ridges. All the finger joints were enlarged and stiff; the second joint of the right middle finger showed a distinct arthropathy. The right foot was clubbed. The great toe was absent and the second partially gone. The other toes were deformed and displaced upwards and backwards. The left little toe was lost, and there was partial loss of the others. Sensation was totally lost over the arms and feet, gradually diminishing as the distance from the periphery increased. The gait was halting owing to the deformity. There was no muscular wasting and no tremors; palsies, contractures or spasticity were present. The arm and leg reflexes were absent. There was no Babinski nor ankle clonus. In one case, in addition to the above changes superficial ulcers of the size from a quarter to a half dollar extended from both ankles to the knees. The Wassermann test was negative in all three. The other two children were healthy. The disease was syringomyelia, Raynaud's disease being eliminated by absence of vaso-motor changes and absence of defective sensation. The latter also ruled out sclerodactyla. The diagnosis from leprosy was made by the absence of pigmentation and the defect of sensibility being segmental rather than peripheral in type.

CHRISTOPHER ROLLESTON.

Spasmophilia with special reference to familial reactions and repeated absences (*Am. Journ. Dis. Child.*, 1914, vii, p. 140).—J. P. Sedgwick finds that in all cases of spasmophilic infants, aged one year or less, the nursing mothers have shown marked heightened electrical excitability. The repeated non-epileptic absences resemble *petit mal*, but bear no relation to epilepsy and have nothing to do with hysteria. They appear to clear up before puberty.

F. R. B. ATKINSON.

Hereditary degeneration (pseudo-hypertrophic muscular dystrophy in combination with degeneration in the central nervous system) (*Am. Journ. Med. Sci.*, 1913, cxlvi, p. 716).—C. D. Camp discusses the ætiology of certain hereditary conditions, specially bearing in mind the rare cases in which there is a combination of myelopathic and myopathic degeneration. This combination may occur in different generations; thus, he records a case of pseudo-hypertrophic myopathy in a child whose father and grandfather suffered from spinal muscular atrophy starting by wasting of the hand muscles. The combination may also occur in one individual; thus he has met with a case of Friedreich's ataxia combined with pseudo-hypertrophic myopathy. Other examples of similar conditions are quoted from the literature. The author suggests that such combined cases must be taken into account when the ætiology of heredo-degeneration is considered. His argument is as follows: In ordinary cases of dystrophy the same type of defect is usually transmitted from parent to child, and the defect is apparently transmitted as are other family traits. Were these the only cases known, we might be satisfied with regarding them as due to "heredity," even though the primal causative factor is unknown. But when we find a case in which one type in a parent is followed by another type of degeneration in the offspring, or when we find degenerative changes variously localised in one individual, it seems more probable that something truly external is acting on the organism, attacking the weaker parts. If that be so, it is possible that the external factor is one which might be removed or dealt with. The author does not allude to the curious sex-incidence shown by some of the maladies in question.

REGINALD MILLER.

Seven cases of pseudo-hypertrophic muscular paralysis, with a special note on the differential blood count (*South African Med. Record*, 1904, xii, p. 251).—**J. J. Levin**.—All the cases were males; three were brothers; the ages ranged between nine and fifteen years. Five had tachycardia. The lowest percentage of mononuclear leucocytes was 38 per cent. and the highest 69 per cent. He thinks the disease is due to a germ.

F. R. B. ATKINSON.

Chronic dementia, cerebellar ataxia, and epileptiform convulsions caused by ptomaine poisoning (*Journ. Amer. Med. Assoc.*, 1914, lxii, p. 1712).—**C. W. Burr** reports the case of a boy, aged 14 years, whose father's character suggested a certain degree of mental insufficiency. The boy himself was of average character and intelligence and had never had any serious illness. Together with twenty other boys he eat some canned salmon at school. In a few hours all became very ill with symptoms of fish poisoning, and several died. The patient survived, but suffered from fever for several months. During this time he had a transient hemiplegia, several general convulsions, and bed sores. At times he was delirious. At the end of eighteen months his dull and stupid state occasionally gave place to acute delirium lasting from two days to two weeks, and convulsions occurred about once a month. When in a state of delirium he rambled in his talk, dwelling on love and religion, and at times he was profane and obscene. He had no knowledge of his whereabouts and was foolishly happy, not violent, but restless. There was no palsy, but his gait was very ataxic—a true cerebellar ataxia. The knee-jerks were normal, but there was no sphincter control. Later he had a number of fleeting visual and auditory hallucinations and presented the picture of dementia plus cerebellar ataxia. The knee-jerks became increased, but the sphincter control was regained. Articulation was good. A month after this the knee-jerks were again normal, and there was no ataxia in the hands. His memory for places and recent events was very poor. His speech became slow and drawing, but his memory improved a little. Severe headaches supervened, and he was occasionally nauseated, but never vomited. The knee-jerks again became increased, but there was no vertigo. His memory became worse, and two general convulsions and five attacks of unconsciousness occurred with many attacks of minor epilepsy. Two years and four months after the commencement of his illness he began to grow, growth having previously been in abeyance. The eyes showed a slight lateral nystagmus and pallor of the discs. The *petit mal* has continued, and when last heard of the patient was still demented and ataxic. Syphilis can positively be excluded.

T. R. WHIPHAM.

Alcoholic cirrhosis of the liver in twins (*Boston Med. and Surg. Journ.*, 1914, clxx, p. 542).—**T. Ely** records the occurrence of alcoholic cirrhosis in two twins. These were breast-fed for fourteen months, and when weaning was accomplished were given brandy. At first this was administered at the rate of three drops every hour, but later was given from time to time in such quantities as half a teacupful. It was estimated that each twin had consumed about a quart of brandy before symptoms of cirrhosis developed. The disease appeared almost simultaneously in both children at the age of four and was fatal in one case which was complicated by tuberculosis.

REGINALD MILLER.

Acute nicotine poisoning (*Journ. Amer. Med. Assoc.*, 1914, lxii, p.

1723).—**H. S. Reynolds** reports the case of a Slav infant, aged 5 months, in the nipple of whose bottle after two feedings the mother discovered some tobacco. More tobacco was also found in the milk basin. After a few hours the child vomited twice and became cyanosed and collapsed. He sweated profusely, and the extremities became cold and clammy. There was some twitching of the muscles of the face, and the pupils were widely dilated. The pulse was weak and irregular, and the respirations were slow and laboured, so that artificial respiration was resorted to on several occasions. Atropine, strychnine, brandy, epinephrin, coffee enemata, external heat and gastric lavage were administered, but after a temporary improvement the child died suddenly. After death the skin became almost immediately covered with purple blotches suggestive of extreme vaso-motor disturbance.

T. R. WHIPHAM.

A case of stramonium poisoning (*'Austral. Med. Gaz.'* 1914, xxxv, p. 341).—**W. C. Howle**.—A child, aged 3 years, eat six cobs of the *Datura stramonium*, and half an hour afterwards was delirious with a marked erythema of the face, chest, abdomen, and fauces. The pulse was over 200. Recovery took place very quickly after washing out the stomach.

F. R. B. ATKINSON.

Guaiacol poisoning by absorption (*'Arch. of Ped.'* 1914, xxxi, p. 285).—**L. A. Sexton**.—A child, aged 3 years, was attacked with scarlet fever of moderate severity on February 10 complicated by cervical adenitis and otorrhœa, and on March 12 by inflammation of the elbow, wrist and knee-joints. On March 21 these were painted with a 50 per cent. solution of guaiacol in glycerin. On the evening of the next day the pulse became rapid and weak, vomiting occurred and large quantities of dark brown urine voided. Restlessness increased, cyanosis gave way to pallor, and the pupils became widely dilated. The child died thirty-four hours after the application. The urine was found to contain guaiacol, but no hæmoglobin or blood were found in the urine. No impurity was found in the drug.

CHRISTOPHER ROLLESTON.

On the toxic effect of pituitary extract on the newborn, probably through the mother's milk (*'Zentralb. f. Kinderheilk.'* 1914, xix, p. 43).

—**H. B. Sheffield**.—Before delivery the mother had been given two injections, each containing 1 c.c. of pituitary extract, for uterine inertia. The child was normal at birth, swallowed water without difficulty, and slept quietly until eight hours after birth it was put to the breast. Shortly afterwards twitching of the extremities began and increased considerably when the child was put to the breast two hours later. When seen by Sheffield twelve hours after the mother's injections, the child was having attacks resembling tetanus every few minutes. Breast-feeding was stopped for some time and bromide and chloral were given. In six hours the child had improved and within two days was quite well.

J. D. ROLLESTON.

Pituitary infantilism (*'Thèses de Paris,'* 1913-14, No. 385).—**S. Chauvet**.—The existence of pituitary infantilism is proved by: (1) Clinical cases without histological confirmation showing signs of pituitary lesions. (2) Clinical cases with histological confirmation. (3) Experimental evidence. When the lesion is confined to the anterior lobe of the hypophysis, pure infantilism results. When the morbid process is not due to a tumour, no

pressure symptoms are observed. On the other hand, when the lesion is due to a tumour, the clinical picture consists of the following symptoms: Pituitary neuralgia, olfactory troubles, bitemporal hemianopsia, widening of the sella turcica, and many other signs of cerebral tumours in general. When the lesion invades the pars intermedia and posterior lobe, there may be also certain symptoms indicating functional disturbances of these organs, viz. adiposity, disorders of carbohydrate metabolism, polyuria and polydipsia, changes in the blood-pressure, somnolence and other less important symptoms.

J. D. ROLLESTON.

Hypophyseal disease and diabetes insipidus (*Med. Record*, 1914, LXXXV, p. 242).—**D. B. Jowett** reports two cases of diabetes insipidus associated with pituitary signs, one of which was in a boy, aged 12 years. In this case there were infantilism, headaches, restriction of visual fields, drowsiness and small sellar outline, combined with polyuria and polydipsia. There was no adiposity, the child being much wasted. Subtemporal decompression was performed and anterior lobe pituitary substance administered with considerable improvement in the boy's general condition. The polyuria persisted.

REGINALD MILLER.

Familial obesity with perturbation of the glands of internal secretion (*Bull. et mém. Soc. méd. Hôp. de Paris*, 1914, XXXVII, p. 290).—**Laignet, Lavastine and Pitulesco**.—In a family of thirteen children only four reached adult life and all showed the characteristic adiposo-genital syndrome and some signs of incomplete Graves' disease. A skiagram was taken in one case, but nothing remarkable was found. Wassermann's reaction had not been performed, and there were no obvious symptoms of heredo-syphilis, but the high familial mortality and the dystrophy were suggestive of that disease.

J. D. ROLLESTON.

Infantile obesity of the adiposo-genital type (*Lyon Méd.*, 1913, cxxi, pp. 929 and 983).—**G. Mouriquand**, in his communication to the Association française de Pédiatrie in October, 1913, under the heading of "Semiology and clinical varieties," discusses Fröhlich's syndrome with pituitary lesions, the adiposo-genital syndrome in extra-pituitary cerebral lesions, and the same in the absence of pituitary or characteristic cerebral lesions, and also Dercum's disease. The experimental side of its pathology is described, together with the changes in the genital system, the changes in nutrition, and the relation of infantile obesity to diabetes. Under the heading of treatment the author includes surgical methods, radiotherapy, and oophorectomy.

VINCENT DICKINSON.

Clinical and anatomical researches on a case of infantilism in an idiot (*Arch. de Neurol.*, 1913, 1, sér. xi, p. 69).—**C. Parhon and A. Tupa** describe a case in a small idiot, aged 19 years, son of an alcoholic father who had never been able to walk or talk. Facial, pubic and axillary hair was wanting, one testicle was undescended, the other very small. The head was large when compared with the rest of the body. The forehead was narrowed and the occiput flattened. The legs were bowed and spastic, the thighs flexed on abdomen and the legs on the thighs. The arms were similarly flexed and contracted. Passive movements were painful. The brain was reduced to a weight of 738 grm. There was no abnormality of heart or arteries. Tuberculosis of both lungs was present. The right

kidney was much diminished in size. The epiphyseal cartilages of the long bones persisted.

CHRISTOPHER ROLLESTON.

A case of supposed progeria (*Boston Med. and Surg. Journ.*, 1914, CLXXI, p. 107).—**C. W. Rand** alludes to the cases described by Hastings Gilford (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, p. 289) and Variot and Pironneau (*ibid.*, 1910, VII, p. 464) and records a personal case. The patient was a girl, aged 8 years, of dwarfish dimensions with double dislocation of the hips and every appearance of being a miniature old woman. Height, 96 cm. (3 ft. 1 $\frac{3}{4}$ in.), was practically that of a child of four years; weight, 14.1 kg. (81 lbs.), was about 10 kg. less than normal. The skin of the entire body was extremely soft, very elastic and thrown into innumerable wrinkles. There was almost complete atrophy of subcutaneous tissues except over the breasts and external genitalia. The hair of the scalp was very abundant and dark, but there was no hair on the axillæ or over the pubes. The genitalia were still infantile. There was great laxity of all the joints. Skiagrams of the skull showed that the sutures had not completely united and the presence of Wormian bones in the lambdoid sutures. The sella turcica was normal in size and contour. There were no abnormal shadows in the sella or interpeduncular region. The heart was not enlarged, and there were no bruits, but the sounds were loud and the radials remarkably rigid for a child. Rand alludes to Parkes Weber's case of mitral dwarfishism (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1913, x, p. 203) in which the under-development was attributed to a hypoplasia resulting from an inadequate arterial supply. The lungs, liver and spleen appeared normal. The neurological examination was negative. The mentality was that of a child of 7 years.

J. D. ROLLESTON.

Hutchinson's teeth as an expression of thyroid insufficiency (*Dermat. Woch.*, 1914, LVIII, p. 545).—**A. Josefson**.—A myxœdematous girl, aged 14 years, in whom Wassermann's reaction was negative, showed crescentic notches of both upper and lower central incisors. There was also considerable delay in the development of the bones of the hands and feet.

J. D. ROLLESTON.

Megacolon in a child, aged 5 years, with myxœdema and fatal inversion of the viscera (*Arch. de Méd. des Enf.*, 1914, XVII, p. 53).—**Péhn** found that 0.07 gr. of thyroidin, continued for a long time, markedly improved the intellectual capacity. The child died of broncho-pneumonia, and on autopsy the megacolon and total inversion of the viscera were found, no evidence of megacolon being present during life. He considers that the coincidence of a thyroidal aplasia and fatal transposition of the viscera supports the view that megacolon is a congenital malformation.

F. R. B. ATKINSON.

Œdema in infants (*Arch. of Ped.*, 1914, XXXI, p. 5).—**H. D. Chapin** puts forward a classification of these cases under four headings: (1) In cases of difficult digestion and mal-assimilation in which the toxæmia of diarrhœa produces vaso-motor paralysis; the œdema being analogous to urticaria. (2) In various exhaustive conditions, prematurity, marasmus, secondary anæmias, œdema neonatorum, and in long debilitating diseases. (3) In various constitutional diseases, *e. g.*, syphilis, tuberculosis, erysipelas, pertussis, etc. (4) Angioneurotic œdema.

REGINALD MILLER.

Milroy's disease ('*Cleveland Med. Journ.*,' 1914, XIII, p. 316).—**J. Phillips** records two cases of persistent hereditary œdema of the legs (Milroy's disease), with acute exacerbations in father and son. In the father, aged 40 years, there was a well-marked painless œdema of the left leg from the knee downwards. It had been present since the first year of life. It had never caused him much inconvenience, but since the age of 10 years the leg at times would become red, swollen, hot and tender for three or four days. The son, aged 6 years, had shown a similar condition of the right leg since he was four months old. After a slight scratch on the foot he developed in a few hours a red, brawny, very tender and painful swelling extending to the knee. The temperature rose to 104° F., and there were severe nausea and vomiting. All the symptoms disappeared in three days, and there were no more acute attacks. J. D. ROLLESTON.

Angioneurotic œdema ('*Med. Record.*,' 1914, LXXXV, p. 1029).—**C. E. Munger** describes the case of a girl, aged 10 years, who suffered from an intense dyspnoea which had come on in apparent health within two hours. Intubation was performed, and the child recovered; six months afterwards the child died in a few minutes from another attack. The disease is often hereditary and runs a mild course except when it attacks mucous membranes; then death may occur rapidly. Injections of adrenalin chloride seemed to have given the best results of all the drugs used. Intubation or tracheotomy may be required. F. R. B. ATKINSON.

Ophthalmology.

Unusual case of congenital defect: absence of eyeballs ('*Amer. Journ. Obst.*,' 1914, LXIX, p. 1077).—**M. Strong** describes this condition in a healthy male child, born at term. At the age of seven he was mentally deficient. The condition is mentioned in Schwalbe's book on 'Teratology,' but is very rare. F. R. B. ATKINSON.

A case of oxycephalus ('*Riv. di Clin. Pediat.*,' 1914, XII, p. 346).—**P. Girardi** describes this case of a boy, aged 14 years, and gives a photographic reproduction of the patient and skiagram of the skull. There were marked symmetrical exophthalmos, divergent strabismus of the left eye, slight pupillary changes, and bilateral atrophy of the papilla. Lumbar puncture had no effect on the patient's condition. VINCENT DICKINSON.

Diphtheritic and diphtheroid diseases of the eye ('*Wien. klin. Rund.*,' 1914, XXVIII, p. 415).—**A. Slauck** records seventeen sporadic cases in children aged from six months to six years. Thirteen were bacteriologically examined. In only one was a pure culture of diphtheria bacilli obtained. In two diphtheroid organisms were found. In three others diphtheria bacilli were associated with staphylococci, streptococci and the Morax-Axenfeld diplobacillus, or staphylococci or streptococci were present either alone or in combination with one another. The most favourable cases were those in which diphtheria bacilli or diphtheroid organisms were present, owing to the readiness with which they yielded to the diphtheria antitoxin. In three such cases the throat was also affected. In spite of the bad prognosis attached by Langier to diphtheritic conjunctivitis following measles (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1908, v, p. 412), the only case of this treated in the present series ran a very favourable course.

Six cases of staphylococcal infection were the most serious. The cornea was affected in all, and in three perforated. Uniform treatment was used in each case. Warm compresses of potassium permanganate were applied and the conjunctiva bathed with 1 in 5000 perchloride. When the membrane had separated, $\frac{1}{2}$ to 1 or 3 per cent. of silver nitrate solution was used. When the cornea was affected atropin was used for central lesions and eserin for peripheral lesions. Diphtheria antitoxin was injected in fifteen cases. No benefit ensued from local applications of the serum. J. D. ROLLESTON.

Corneal ulcer due to *B. pyocyaneus* (*Wien. klin. Rund.*, 1914, xxviii, p. 211).—**Jacobi** points out that *B. pyocyaneus* is a not unimportant cause of corneal ulcer, and the course is usually rapid and malignant. Though generally setting in after an injury, cases do occur when no trauma can be found, as happened to his patient, a boy, aged 12 years. The corneal ulcer in the right eye was very extensive; culture gave *B. pyocyaneus*. The result of treatment was unusually satisfactory. After an artificial coloboma had been made in the right eye, he could count fingers at $2\frac{1}{2}$ in.; vision was normal in the left eye. M. D. EDER.

Exophthalmic goitre in a girl, aged 7 years; similar heredity (*Bull. et mém. Soc. méd. Hôp. de Paris*, 1914, xxxvii, p. 708).—**G. Railliet**.—The father had had Graves' disease and died after thyroidectomy. The mother showed extreme nervousness, tremor and tachycardia. The first symptom in the child, viz. tachycardia, had occurred after an attack of whooping cough and measles. Exophthalmos was very pronounced. The tachycardia ranged from 100 to 160. Exaggerated growth was shown by her height at the age of 9 years being 1.28 m., i. e. 8 cm. higher than normal. Jellinek's sign, i. e. pigmentation of the lids, varied from time to time.

J. D. ROLLESTON.

Exophthalmic goitre in a child, aged 7 years (*La Clin. Inf.*, 1914, xii, p. 409).—**Railliet** reports a case which is interesting owing to the age of the patient, Graves' disease being exceptional below the age of 8 years. The first symptom noticed was the thyroid swelling, but there had been irritability of temper for some time previously. The exophthalmos was very marked; tremor had only been noticed for a short time. The pulse-rate varied from 92 to 120. The oculo-cardiac reflex showed a slight acceleration. Pigmentation of the eyelids and inequality of the pupils also existed. Hæmato-ethyroidine was administered for some time, but its high price prohibited its continuous use. Sodium salicylate was given up to 2 grm. daily. Twelve exposures to X-rays did not produce any amelioration. Some improvement, however, eventually took place spontaneously.

VINCENT DICKINSON.

Amaurotic idiocy with a positive Wassermann reaction (*Journ. Amer. Med. Assoc.*, 1914, lxi, p. 1545).—**G. E. Price** reports the case of a boy, aged 16 months, a Russian Jew, whose parents are living and in average health. There is no case of blindness in the family or any definite history of nervous or mental disease. One other child died shortly after birth from "hæmorrhage of the navel." The patient was born at full term after a normal labour and had been perfectly healthy until about two months old. He did not take any notice or sit up at the usual time, had never talked, and had never attempted to walk. His first tooth was cut when he

was seven months old. The child seemed backward in every way and had one convulsion two months prior to examination. Since this convulsion the baby had seemed dull and had not helped himself as much as formerly. The child was found to be well formed and well nourished, but with general muscular weakness. The reflexes were preserved, and Babinski's sign was present. Impairment of vision was evident, and a report of the ophthalmoscopic findings were as follows: "Double optic atrophy with a red spot in the region of each fovea centralis, surrounded by a whitish or greyish areola." A Wassermann test of the blood was positive, but an examination of the cerebro-spinal fluid of the child and of the blood of the mother was refused.

T. R. WHIPHAM.

Reviews.

ASPECTS OF DEATH IN ART AND EPIGRAM. ILLUSTRATED ESPECIALLY BY MEDALS, ENGRAVED GEMS, JEWELS, IVORY, ANTIQUE POTTERY, ETC. By F. PARKES WEBER, M.A., M.D., Fellow of the Royal Society of Antiquarians and of the Royal Numismatic Society. Second Edition, revised and much enlarged. With 126 illustrations. London: T. Fisher Unwin and Bernard Quaritch. Price 10s. 6d. net.

EVERY reader of this JOURNAL is familiar with Dr. Parkes Weber's erudition, of which the present volume offers another striking example. The work is divided into four parts. The first is an introduction and general account, the second contains an analysis of the various aspects of death and mental attitudes towards death, the third deals with medals and coins, and the fourth with engraved gems, finger rings, jewels, etc.

The book contains a vast amount of information culled from out-of-the-way sources, and we are, therefore, somewhat surprised that Dr. Parkes Weber has quoted only two "chestnut" examples of epitaphs on deaths in children (pp. 166g and 166h). Among the numerous excellent illustrations we may draw attention to a German plaque (p. 251) of about 1530 A.D., illustrating the beginning and ending of life, and representing a woman suckling an infant. On a tablet is a death's head and on a window-sill an hour-glass. Another medal (p. 261) with similar purport shows a naked child holding a flower seated by a skull and bones. In the background is a tree with one branch withered and the other in flower.

Dr. Parkes Weber is to be congratulated on his scholarly achievement, and it is to be hoped that some other writer will follow out his suggestion that many other subjects might be similarly treated, such as Law and Justice, Finance, Love, and Evolution.

J. D. R.

SYPHILOLOGY AND VENEREAL DISEASE. By C. F. MARSHALL, M.D., M.Sc., F.R.C.S. Third Edition. London: Baillière, Tindall & Cox. 1914. Price 10s. 6d. net.

THE present edition of Dr. Marshall's well-known text-book has been well brought up to date. As pointed out in our review of the last edition (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 431), a considerable portion of the work is taken up by a discussion of the various aspects of syphilis and gonorrhœa in children. Several pages are devoted to the question

of the paternal transmission of syphilis, with the conclusion that there is not sufficient evidence to justify renunciation of the doctrine. As regards the prophylaxis of inherited syphilis, it should be noted that Dr. Marshall recommends mercury in preference to salvarsan in treatment of the mother during pregnancy. An important chapter has been added on "Venereal Disease and Public Health," in which the author states that ophthalmia neonatorum is the cause of one third of all cases of blindness in the blind schools, and that inherited syphilis is one of the principal causes of deafness in children.

J. D. R.

ALIMENTARY ENZYMES IN THEORY AND APPLICATION, WITH SPECIAL REFERENCE TO THEIR USE IN TREATMENT AND DIETETICS. Benger's Food, Ltd., Otter Works, Manchester.

THOUGH obviously intended as an advertisement for Benger's products, this volume contains a mass of practical information which will well repay perusal. Many points regarding the digestion both of infants and adults are discussed, and the chapter on the physiology of digestion affords a critical survey of recent medical literature on this subject. The second part of the book deals more especially with the use of Benger's products. The work is based largely on questions put to the firm from time to time, and is an attempt to present the information in a connected form, in the hope that it may prove interesting and useful to medical men generally, and in order that they may have available detailed and authentic information whenever such is required. We understand that any qualified medical man can have a copy of the book on application to Messrs. Benger's Food, Ltd.

J. A.

Correspondence.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

DEAR SIR,—May I solicit the hospitality of your columns to make known the requirements of the Maternity Nursing Home which is being started by the Professional Classes War Relief Council?

Mr. J. Pierpont Morgan has most generously lent us 13 and 14, Prince's Gate for the Nursing Home for the period of the war, and now we have to furnish it. Many people who are not in a position to give money may be able to give or lend some of the things that go to the furnishing of a house, such as furniture of all sorts, house- and table-linen, blankets, cutlery, plate, screens; also bassinets and baby clothes.

Would those kindly offering help write first to Mrs. Hills, 32, Prince's Gardens, S.W., stating what they are prepared to give and what to lend?

On acceptance of their offers they will be asked to send the articles direct to 13, Prince's Gate, S.W., clearly marked in the case of articles on loan.

Crockery and glass we can only accept as a gift, as we cannot insure against breakage.

All furniture will be insured against fire.

I am,

32, Prince's Gardens, S.W.;
November the 4th, 1914.

Yours faithfully,

JULIET HILLS.

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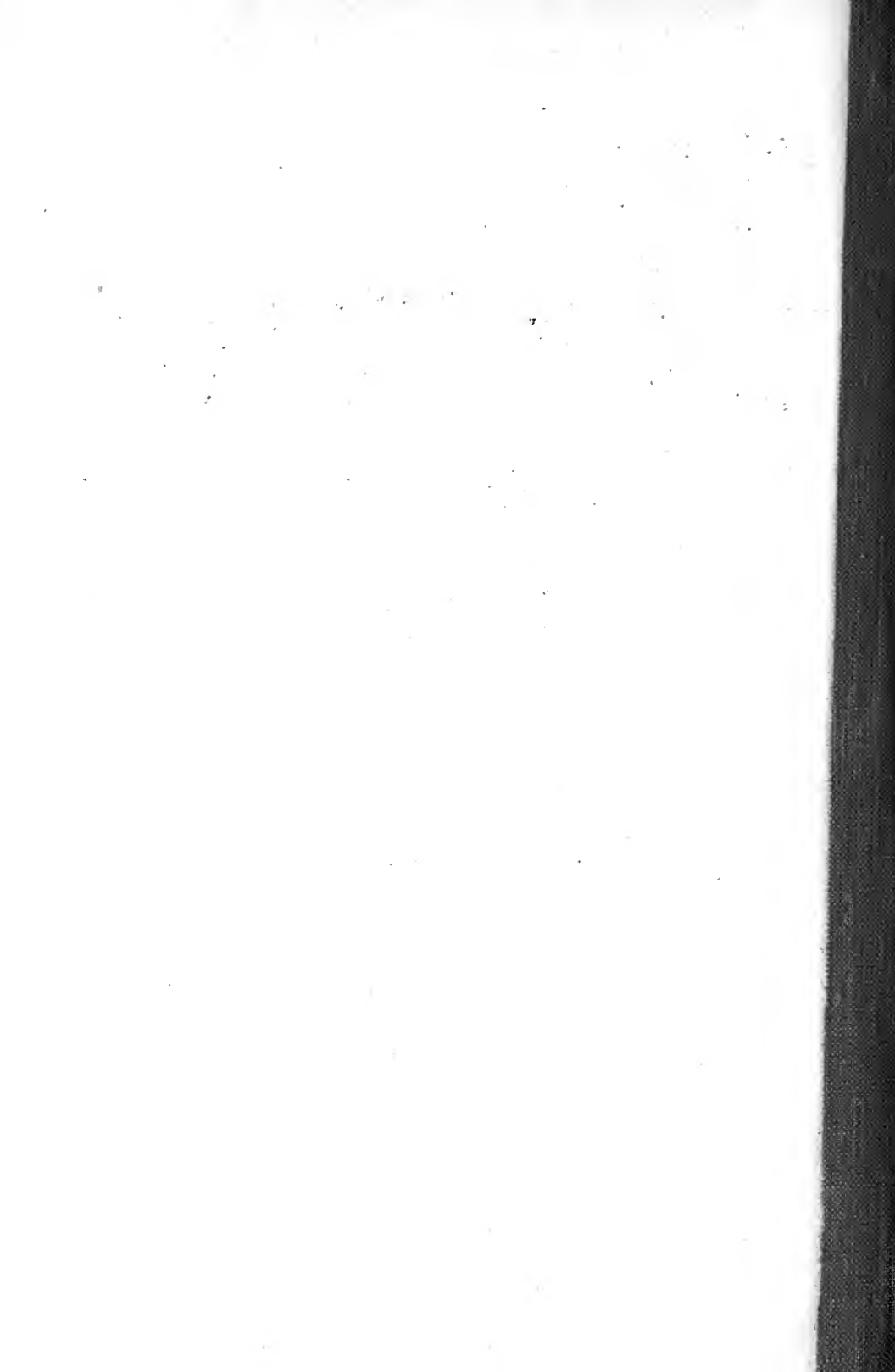
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